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MONEY AND MUD

by William Flynn

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The Story of


SAN FRANCISCO

INTERNATIONAL

AIRPORT



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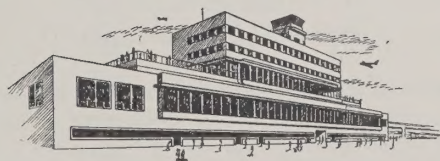
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UNIVERSITY OF CALIFORNIA

Men, Money, and Mud



The Story of
SAN FRANCISCO
INTERNATIONAL
AIRPORT

by William Flynn

PUBLIC UTILITIES COMMISSION

City and County of San Francisco

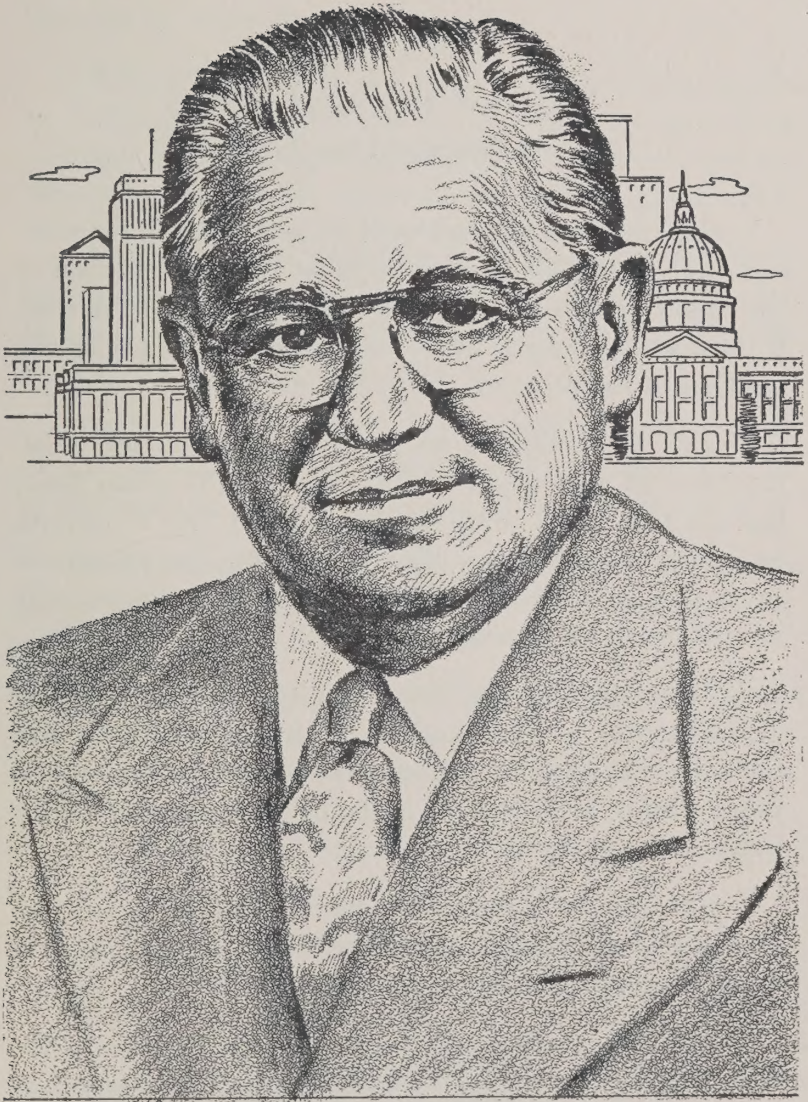
Resolution No. 14296

RESOLVED, That we the members of the Public Utilities Commission of the City and County of San Francisco do hereby designate the book "Men, Money and Mud — The Story of San Francisco International Airport" by William Flynn, the official history of San Francisco International Airport.

OLIVER M. ROUSSEAU, President
VICTOR S. SWANSON, Vice President
SAM McKEE
EDWARD B. BARON
DONALD A. CAMERON

San Francisco International Airport was dedicated August 27, 1954.

Final construction, including the \$14,000,000 Administration and Terminal Building, was directed by Public Utility Commissioners Oliver M. Rousseau, Victor S. Swanson, Sam McKee, Edward B. Baron, and Donald A. Cameron. Their chief executive officer was James H. Turner, Manager of Utilities.



Elmer Edwin Robinson, Mayor
City and County of
San Francisco—1954

AN ACHIEVEMENT

By Elmer E. Robinson, Mayor

City and County of San Francisco

San Francisco International Airport clings to the western shore of the land-locked Bay that Nature fashioned as the Pacific's majestic harbor for ships sailing the seven seas. It is a great, man-made haven for winged vessels plying the limitless, invisible ocean that is the air.

Only by combining men's vision and technical skill, the earth of mountains, and the mud of the ocean floor, has the City of St. Francis, our beloved San Francisco, been able to provide an efficient base for the aircraft of commerce, the aircraft of defense, and the smaller craft that give man his individual wings.

Distinctive features of topography gave San Francisco its harbor, the fundamental reason for its existence. But the narrow Peninsula, with its spine of upflung hills whose slopes plunge precipitously to the brink of the Bay's deep water, forbade inclusion of a natural airport site.

The City, its lifeblood commerce, could not ignore the necessity of an adequate aerial terminal although natural barriers posed a problem in its establishment.

Distances to its markets—beyond the horizon to the North and the South, to the East and to the West—were to be measured in minutes rather than miles. An air terminal supplying service necessary to meet demands of modern commerce became vital as transit of men and materials grew strong, multi-mile-a-minute wings.

How effectively the challenge was met may be judged by the accomplishments and results of less than three dec-

ades' work, designed to maintain San Francisco as North America's major Pacific port—whether the ships it serves come by sea or by air.

The conquest of the deficiency of Nature's handiwork in fashioning the contours of the Bay has now been finished, the last great achievement the completion of the distinctive, functional, efficient Administration Building.

But before this could be done men were forced to translate dreams into reality, the citizens of the community to invest in the future of a new industry, so that all could keep a rendezvous with destiny.

We have now reached that rendezvous—and beyond lie the limitless horizons of greatness that is the future of the Great Pacific Basin, the center of the next Age of Man.

I am humbly grateful that it was my good fortune to guide the efforts that brought to a culmination the great achievement that is San Francisco International Airport.

In the years to come this reclaimed land, these gigantic buildings, the living, vital city within a city will be a monument to the skill, courage, and work of all the citizens of San Francisco.

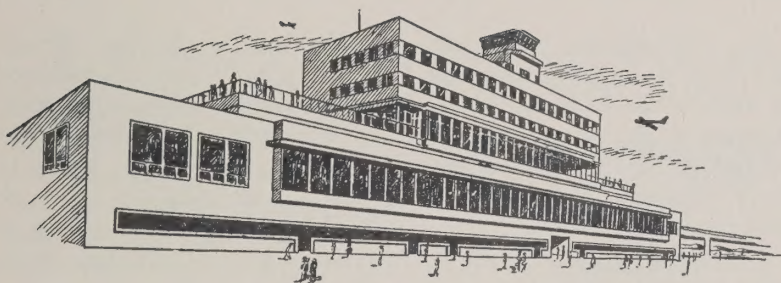


SAN FRANCISCO

San Francisco is another California. Arriving at night, the hills terraced with light and the pungent smell of low tide in the air, you have a sense of exhilaration that no other town in the country can give. At the end of every street is a breath-taking vista, the bay, the bridges, an expanse of sky at the top of one of San Francisco's hills. This was real drama, inherent drama, and the San Franciscans seemed to walk with conscious pride, knowing the quality of their city. . . . In the late afternoon sun, the hills that roll back from the Golden Gate were tawny colored, the red of the bridge a warm terra cotta. And the wind blows strong off seven thousand miles of ocean.

—I Write from Washington by Marquis Childs.

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New York and London



Men, Money, and Mud

San Francisco International Airport technically is but a pin-point on the eastward whirling mass of the Universe that is the Earth.

It is situated at Latitude 37 degrees, 37 minutes North; Longitude 122 degrees, 23 minutes West.

But these figures of a navigational fix—resulting from the integration of time and sun in relation to the momentary position of the planet—represent more than mere statistical information.

They symbolize man's mastery of a challenge to his will and determination to dominate, to shrink, time and distance.

But in the beginning, San Francisco was slow to realize the need for an adequate airport within the community area.

It was not until 1926 that a serious program of construction was undertaken, although proof of man's ability to fly had been demonstrated to citizens of the region for more than a score of years and several of the history-making, epic flights of aviation had been witnessed by thousands of San Francisco citizens.

Twenty years before Wilbur and Orville Wright successfully flew the first mechanically powered, heavier-than-air machine 105 feet in three and one half seconds above the sands of Kitty Hawk, North Carolina, on December 17, 1903, the ability of human flight had been proved near San Francisco.

It was in 1883 that Professor John Joseph Montgomery, to be associated with the University of Santa Clara, successfully made the first glider flight in the United States.

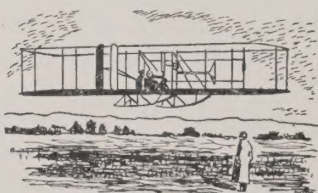
"MEN, MONEY, AND MUD"

His experiments were conducted in the sun-drenched valley that is San Francisco's land gateway to the Southland. As seemed to be the fate of aviation's pioneers, none took his achievements seriously.

Only a few realized he was but a single step short of the goal which man had sought probably since he had first observed the successful defiance of gravity by the earth's winged creatures.

To the glider proved by California's Montgomery, the Wright Brothers added a gasoline engine they had designed themselves with the aid of Charley Taylor, an expert machinist.

Automobile engine builders rejected their inquiries for a suitable power plant with the convenient excuse of "too busy." They could not meet the specifications.



The Wright Brothers' engine developed a maximum of 16 horsepower. It weighed just under 200 pounds, or approximately 12.5 pounds per horsepower, as compared with the single-pound per horsepower and less engines that now lift multi-ton aircraft from the concrete ribbons that are the runways of San Francisco International Airport.

Experiments by the Wright Brothers and those who followed them were dismissed generally as interesting but impractical.

But the interest of a few with energy and ingenuity was sufficient to advance the science of aviation beyond the capabilities of ground facilities to accommodate increasingly efficient aircraft.

Those pioneers were principally barnstorming civilian pilots, proteges of the Wright Brothers; and Glenn Curtiss who flew his first plane on July 4, 1908.

San Francisco was one of their favorite cities.

But it had no airport.

The flyers made the best of makeshift fields, utilizing golf courses and sand dune areas.

Their base for the flying meet of January, 1911, was established on the bay shore side of San Francisco Peninsula, near the site of the present Tanforan race track.

A portion of the area extended into the marsh lands that now are within the boundaries of San Francisco International Airport, 15 miles south of San Francisco.

Activities of the barnstorming pilots during the 1911 San Francisco Air Show included two experiments which were carried out successfully and affected the peace and security of all peoples of the world. They were "firsts" in the history of United States aviation.

One was proof that wings could be grafted to heavy artillery. It was, in effect, the birth of heavy bombardment.

Lieutenant Myron C. Crissy of the United States Signal Corps released manually a six-pound explosive bomb from a Wright biplane piloted from Tanforan by Philip Parmelee, a civilian.

It was the first explosive missile dropped from an airplane.

The bomb detonated a hole in the San Francisco Peninsula marshland that was three feet in diameter and two feet deep.

In reality, the explosion was the birth of bombing — the action that was to scar London, Berlin, Tokyo and climax — so far — in the searing of Hiroshima with atomic fire.

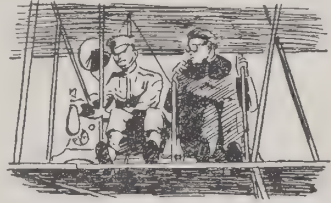
The pioneers of the science of precision bombing had two objectives.

They hoped to prove the value of the airplane as a military weapon. They also claimed the fighting and bombing plane could be an instrument of such force that it could guarantee peace with the authority of righteous might.

Three days after the successful bombing experiment, on January 15, 1911, Eugene Ely carried out successfully the second experiment that was to influence the military and political thinking of the world.

A youthful automobile racing driver and mechanic who had taken to the air, Ely was working with Glenn Curtiss to prove the

airplane could be made into an efficient weapon of naval warfare.



Shortly before noon on January 18, Ely lifted his Curtiss pusher from the Tanforan "airport" and flew at a speed of 40 miles an hour toward San Francisco. Skimming the summit of Twin Peaks, he piloted his fragile plane toward the waterfront where the Cruiser Pennsylvania was moored a few hundred yards off shore.

The Pennsylvania carried strange gear.

A wooden platform was sprawled over the after deck.

A large canvas screen was rigged inboard of the ship's aftermast.

Protecting canvas screens guarded the port and starboard sides of the platform whose surface was laced with a series of lines stretched a few inches above the surface, anchored at each end with sand bags.

As thousands watched breathlessly from vantage points along the waterfront and from the hills that loom over the Embarcadero, Ely made a low turn over the cruiser.

Rapidly losing altitude, his plane dangerously near the stalling speed, he made an approach toward the Pennsylvania.

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So doing, he violated one of the safety rules of modern flying. He attempted a down-wind landing.

The plane faltered toward the platform.

For a moment it appeared he was below the level of the "flight deck."

The plane lifted.

The wheels touched down.



A trailing hook in the tail caught the third line of the primitive arresting gear. Weight of the sand bags dragged the plane to a halt, barely short of the canvas "crash barrier."

An hour later, after being toasted with champagne by the officers of the Pennsylvania and their guests, Ely turned his plane around on the "flight deck" and took off successfully to land at Tanforan.

Ely's landing and takeoff was the first flight of a land-based aircraft to and from a naval vessel.

It was the birth of offensive naval aviation whose fundamental instrument is the aircraft carrier—the weapon that made possible Pearl Harbor, the battles of the Coral Sea and Midway, the Second Battle of the Philippines — all engagements that shaped the history of man.

San Francisco was thrilled by the bombing and the "air craft carrier" flights. But its citizens did not realize the implications of the events they had witnessed.

That is not to their discredit.

The admirals and the generals of the time also failed to recognize the significance of the flights.

Marine riflemen could easily shoot down any aircraft that might dare to venture within range of a warship, the admirals reasoned.

The generals conceded the aircraft might have some value as a reconnaissance instrument but belittled its ability to carry a sufficiently large bomb load to be of any consequence in "modern" warfare.

Two years after the historic San Francisco air meet of 1911, citizens of the Bay Region were treated to the sight of another "first" in the nation's aviation history.

It was the flight of the first twin-engine aircraft to be built in the United States.

The craft was designed and constructed by a San Jose youth, Sam Purcell, and flown from a base at San Rafael.

Speedily the years brought greater perfection in aircraft. Pilots basing their operations in the San Francisco Bay Region used a variety of fields. None was satisfactory.

The Panama Pacific International Exposition of 1915 featured the aerobatics of Lincoln Beachey.

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A gay, debonair pilot, he specialized in looping his plane, the thrilling maneuver of the day. It was the maneuver that claimed his life.

Beachey and his fellow pilots flew for thrills from a landing strip in the Marina District that borders on the Bay.

But for its geographical features, the Marina "airport," bounded by the Bay, the Presidio, Marina Boulevard and Fillmore street, might have become San Francisco's airport.

But the wooded hills of the Presidio, the Marina residential district, the nearby integrated projects of urban development were insurmountable handicaps.

Reclaimed land of the Marina was only wide enough to permit installation of a single runway, opposed to the direction of the prevailing wind. Its length would soon prove too short to accommodate the operational characteristics of planes that were being designed and produced.

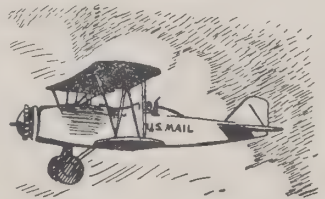
Military authorities established Crissy Field as an integral part of the Presidio of San Francisco. It was made deficient by the same geographical and urban features that stunted the growth of the Marina district civil airport.

As planes increased in size and tonnage, requiring longer and longer runways, the Presidio airport became obsolete, useful only for emergency landings or for light tactical aircraft.

Despite the increasing importance of the airplane and demonstrations that it was adaptable not only to war but to the commercial needs of peace, San Francisco made no serious effort to establish an adequate aerial terminal.

After the First World War released the pent-up energy of military flyers for civilian undertakings, there were a number of graphic demonstrations that distance, when speed was desired, could be measured in terms of minutes rather than miles.

Even before the Armistice of November 11, 1918, the first attempt was made to adapt the airplane to commerce.



The first mail service, operated by the United States Army for the Post Office Department, was flown on May 15, 1918, between New York and Washington. The next year, a Navy flying boat, commanded by Lieutenant Commander Albert Cushing Read, spanned the Atlantic, reaching the Azores on May 17.

Both achievements were significant to the future of San Francisco, the city of commerce.

The airmail extension to the Pacific Coast would speed business, held the possibility of placing personal travel across the

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continent during hours rather than days within the reach of man.

And, if planes could fly the Atlantic, why not the Pacific, from San Francisco, to the trade centers of the Orient and Australasia?

Developments came swiftly. Airmail became more than a philately hobby.

Trans-continental routes were pushed westward, following the trail blazed by the pioneer Pony Express riders who provided California with its first swift communication with the Atlantic seaboard.

There was one glaring deficiency in the early air mail operations.

The aircraft were grounded during the hours of darkness. The interruption in service made the extra cost hardly economical for patrons. Each day the operation was confined to daylight hours was another day's grace for San Francisco, still without any definite program for establishment of a needed airport.

The obstacle of night mail flying was hurdled during the hours of darkness on February 21 and 22, 1921.

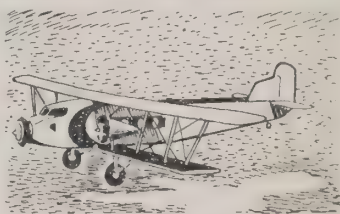
Jack Knight, later a famed United Air Lines pilot who flew in and out of San Francisco Airport, piloted the night mail from North Platte, Nebraska, to Chicago.

After his flight it was certain that airmail planes would span the continent. San Francisco

was the logical terminus of the operation westward — until the Pacific should be spanned.

The next several years brought proof that the Atlantic Coast and the Pacific Coast were separated only by hours—not miles.

During May 2 and 3 of 1923, Lieutenants John A. Macready and Oakley G. Kelly of the Army Air Corps spanned the continent in an uninterrupted flight from New York to San Diego.



A year later, during June 23, 1924, Lieutenant Russell L. Maughan of the Air Corps kept pace with the sun in its westward movement and flew from New York to San Francisco between dawn and dusk. His flight time totaled 21 hours and 44 minutes. His plane was a Curtiss biplane pursuit ship. He landed at Crissy Field.

Such flights were the results of developments achieved by aeronautical scientists during the war years of 1914-1918 who then attempted to adapt their machines to the needs of peacetime commerce — and future military demands.

The flights were only a hazy and incomplete glimpse of the things to come—operations that modern world achievements have failed to encompass.

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As proof was given that the airplane was destined to be — and actually was—a new means of transportation, San Francisco could not make up its mind concerning its airport.

Onetime military flyers who had resumed the role of civilians but had not shed their wings were using the Marina District airport.

Among them was Bernard M. Doolin. Later he was to plot a true course for San Francisco's effort to develop and maintain an adequate airport.

Flyers of the period used a number of "fields" in the vicinity of San Francisco.

Sand dunes of the Ingleside district were sites for takeoffs and landings. Passengers were carried from the tide-packed sands of the Beach.

Purcell made a landing in the Civic Center Plaza, duplicating the feat of Joseph Bocquel, who "touched down" in front of the Civic Auditorium, the night of July 23, 1916. Both Civic Center landings were made without injury, although Purcell was flying a 400-horsepower Curtiss plane.

These events were spectacular but hardly significant as far as practical development of aviation facilities in San Francisco were concerned.

A few knew an adequate air field was a basic need of the community. Consequently, there developed an undercurrent of demand for concentration of San Francisco's aviation activities at

a central site, a port that would be adequate for the present and adaptable to development to meet the needs of the future.

As need was recognized, the realization crystalized that such a field could not be constructed within the geographical limits of the city.

The decision was made to start the project at a site to be selected somewhere outside the city's 44.82 square miles.

On November 2, 1926, San Francisco voters were asked to approve a charter amendment that would permit the city to purchase land for development of an airport outside the county.

The vote was: Yes, 81,552; No, 16,592.

The almost five-to-one favorable endorsement was one of the largest majorities given a municipal proposition in the history of modern San Francisco.

With the decision made concerning fundamental location, the task of bringing the project to reality began. It was to be a number of years before the successful combination of "Men, Money, and Mud" was to be found.

The Municipality Takes Over

The election of 1926 placed responsibility for administration and completion of the airport upon the municipal government. Consequently, the project immediately became influenced by two factors.

The first was the hallmark of democracy—the right of every

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citizen and official to consider himself an expert on the subject under investigation and imposition of check and balance procedures which curb headlong action.

The second was politics, a by-product of democratic government in action that is harmful or helpful, depending on the vision of those individuals implementing the theories of government.

Directly responsible for San Francisco's airport program was the Board of Supervisors which included 18 members under terms of the Charter effective in 1926.

When the Supervisors had adopted the municipal budget for the fiscal year of 1926-27, several months before the November election, they approved a \$100,00 appropriation for the airport — the site still to be chosen.

City Engineer M. M. O'Shaughnessy and his staff had provided these specifications:

1. Nine thousand foot runways.

2. Two 12-plane hangars.

3. Lighting installations, "wind cones," meteorological station, machine shop, gasoline and oil servicing units, fire fighting and first aid equipment.

The total estimated cost was \$350,000.

But these specifications did not stipulate where the work should be undertaken. Suggestions included:

Construction of platforms over waterfront piers.

Construction of a platform over the Southern Pacific Railroad's trainsheds at Third and Townsend streets.

Reclamation of shoals bordering Goat Island, rejected during the 1926 "airport era" but later developed as Treasure Island that was to play an important financial role in the expansion of the site eventually selected.

Development of the Marina site also was suggested. But government airmail operators already had abandoned it because of fog and terrain conditions and moved their base to Concord in the East Bay.

And there was a mysterious proposal. It was termed "Reclamation of the Twin Peaks Mesa."

The trouble was, none could definitely identify the "Twin Peaks Mesa."

Roofing of the Civic Center also was suggested — and rejected.

City Engineer O'Shaughnessy and his staff took a more realistic view of their task. They investigated six sites.

They were:

South San Francisco, the Mills Estate property near San Bruno; Sharp property just south of the Mills acreage; the Millbrae airport, west of the Bayshore Highway, adjoining the Sharp property; San Mateo Point, on the bay shore opposite San Mateo; and San Mateo Airport, near Beresford.

November 1, 1926, the day before the balloting on the basic charter amendment, the city en-

gineers filed their report with the Supervisors. They recommended the Mills Estate site, 14 miles south of San Francisco, an estimated 22 minutes automobile driving time from the Civic Center.

The property provided 160 acres of land that would be available immediately for development. It was land above the Bay tides. Adjoining were 1,000 acres of submerged land that could be reclaimed.

While members of the Board of Supervisors were debating the O'Shaughnessy recommendation, The San Francisco Chronicle commented editorially:

"It is no strain on the imagination to foresee the time when a city with superior facilities for air commerce will have an advantage over communities not so equipped.

"It bears some analogy to the question of seaport facilities and some to rail and terminal equipment.

"San Francisco is peculiarly situated to possess an unexampled combination of all three."

After considerable debate on the subject of the airport, the Board of Supervisors acted on March 17, 1927.

Ordinance No. 7428 was adopted. It authorized the lease of 150 acres of the Mills property for three years with an option for renewal.

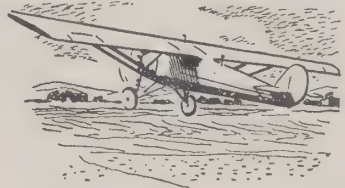
The rent was \$100 an acre, \$15,000 a year. Simultaneously, Supervisors approved two \$25,000 appropriations, one for de-

velopment of the land area, the other for hangar construction.

"This puts San Francisco on the airlines of the world," commented Supervisor Milo Kent, chairman of the Special Airport Committee.

It is worthy to note that San Francisco officially embarked on its airport program and Kent made his observation before the nation and the world were made to realize that the airplane would be a vital instrument of world communication.

The current perfection of the Wright Brothers' primitive craft was demonstrated a few weeks later by the non-stop flight from New York to Paris by Charles Augustus Lindberg, completed May 21, 1927.



The world's acclaim for his feat distilled popular acceptance of the aircraft—but San Francisco already was attempting to solve the little realized problem of air terminals.

But it took more than legalistic action to place San Francisco actually on the "airlines of the world." It might be said that not only the actual airport but the "airlines" were mere figures of speech. At best, they were predictions.

The "airport" was only lines on a blueprint.

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There remained the task of translating those lines into the material facilities of an aerial terminal that would adequately serve the air traffic that eventually would fly the airplanes of the world—still to be established.

The Supervisors of 1927 did not long delay start of work once they were committed to the airport program. Nor did the engineers of the San Francisco Department of Public Works who were given the responsibility for actual construction.

The Supervisors voted their first actual expenditure of \$1,200 for plans almost the same day they took the action that committed San Francisco to development of the Mills Estate acreage into Mills Field, the city's airport.

The utility was dedicated officially with much ceremony on May 7, 1927. On June 1, Frank A. Flynn, San Francisco native and World War I military flyer, took over as superintendent.



The airport began operation on June 7. On September 21 five planes participating in the Pacific Coast Air Derby took off from Mills Field for Spokane. September 23 marked the construction of an \$80,000 hangar. On October 15, 1927, a Boeing transport, one of the planes op-

erated by the predecessor company of United Air Lines, landed at the terminal.

The pilot of the first regular commercial airliner using the field had his choice of three runways. They were described officially as:

"Two hundred feet wide and 5,770 feet long, 2,750 feet long, and 1,850 feet long, with a macadamized surface, capable of bearing a 20,000 pound weight traveling at 80 miles an hour."

Unofficial but none-the-less authoritative estimates of the field gave a somewhat different picture. Paul Isaacs, civilian flyer, recalls Mills Field of 1927 as "a mud hole, just a mud hole."

The first years of operation, officially designated as San Francisco's permanent aerial terminal on August 5, 1928, by the Board of Supervisors, has been reviewed by Flynn. He wrote:

"About this time it became popular to fly somewhere—anywhere—to a place across the ocean.

"James Dole of Hawaiian pineapple fame offered \$35,000 to the pilot of the first plane to fly from the United States mainland to Hawaii.

"Oakland had established its municipal airport on Bay Farm Island and with the almost unlimited funds of the Port Commission had developed the field to an imposing degree of what was considered in those days perfection.

"Because of the long runway for the unprecedented heavily loaded planes it was decided to use the Oakland Airport for the takeoff in the Dole Race.

"The San Francisco public deemed this choice an affront by the Dole contestants and I was unable to make the public understand that the runway requirements for a takeoff on such a long over-water flight were not the same as the requirements for commercial aviation.

"Even the fact that Captain Charles Kingsford-Smith and Lieutenant George Pond, USN, chose Mills Field in their attempt to break the non-fueling record with a much heavier plane than any entered in the Dole flight did not dispel the unwarranted pessimism of the public of San Francisco toward their own field."

Flynn then reviewed the first attempt to establish San Francisco as a terminal city for commercial airline operations:

"Unfortunately, the first day that the field ever had been covered with fog since it opened was the day set for the official takeoff of the first airmail plane.

"The Boeing officials were chagrined and their first impressions were lasting.

"Certain of their pilots apparently had preconceived opinions that Mills Field was unsafe and a month later, in November, 1927, Boeing left the airport.

"On March 7, 1928, Dieudon Coste and Joseph Le Brix (French flyers) landed at the

field on their round-the-world flight but it seemed that ill luck continued, for the reception committees clashed over their authority and the result was general bad feeling.

"In May of the same year (1928) the Western Air Express and Maddux Air Lines, operating up and down the Pacific Coast, both chose Mills Field as their Bay Region base of operations.

"We were particularly pleased because of this triumph when suddenly and without explanation these two transport lines moved to Oakland and no one knows to this day the reason.

"Despite these setbacks, Mills Field continued to be the landing place for numerous air derbies, for celebrations, for memorial 'flight days' and a host of private flyers who were not influenced by these unseen powers which seemed at this time to be working against Mills Field.

"Three new hangars were built, a concrete apron was constructed in front of the hangars and many other capital improvements were made to supply the constant demand for more space."

The official municipal report of the airport's activity for the year of 1928-29 remarked:

"Operation of Mills Field and San Francisco Municipal Airport continued generally in a satisfactory manner although its development and the construction of necessary facilities has been retarded by lack of funds."

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Voters had rejected a proposed \$1,700,000 bond issue for airport improvements on November 7, 1928. The vote was: Yes, 75,993; No, 59,354. Although the proposition received a majority vote, a two-thirds approval was required for issuance of the bonds.

Consequently, the only funds available for airport operation was \$160,000, included in the regular municipal budget for 1929-1930 fiscal year.

Reasons for voter refusal of the bond issue were general dissatisfaction with operation of the airport. The San Francisco Chronicle sent a reporter to investigate conditions. He wrote:

"Directly in front of this (hangar) apron is the world's prize mudhole and dust producer.

"The drainage system of the field is good as far as it goes, but it drains only a limited portion of the field."

He noted the field's income from rentals and other money producing sources was but \$1,100 a month, less than a tenth of the city's subsidy for the utility, a subsidy paid directly from tax funds.

The Chronicle followed the reporter's account with editorial comment, saying:

"Certainly there has been a disposition to give small heed to the wishes of flyers and transport companies using the field.

"This amounts to a failure to realize that an airport is a busi-

ness enterprise which must please its customers or drive them away.

"Seeking for a reason for this failure, we can find it only in the political management not accustomed to looking at municipal enterprise as a customer-pleasing business."

Supervisors sought advice. They also sought to shift some of the responsibility.

Their Airport Committee asked for appointment of an Airport Advisory Committee on April 5, 1929.

Members chosen were William G. Marvin, a retired capitalist; E. E. Mouton, an Inspector for the Department of Commerce; and Lieutenant Colonel Gerald C. Brant, commanding officer of Crissy Field.

Before the Advisory Committee could complete its study and make recommendations, the airport became an issue in a municipal election.

Public dissatisfaction was crystalized by the so-called Lindbergh incident. Citizens were embarrassed.

The Atlantic flyer attempted to take off from the field in a 32-passenger plane.

Taxiing to the take off position, he turned off the surfaced runway to give clearance to an approaching plane.

Weight of his aircraft broke the crust of the unpaved surface.

Lindbergh was stuck in the mud.

He was towed out by a tractor and continued his flight.

Discussing results of Lindbergh's mishap, an early historian of the airport observed somewhat plaintively:

"Only those who have watched closely the fickleness of the public's taste and imagination can realize how this incident worked against those who were striving to acquire for Mills Field the united support it deserved."

Supervisor Kent, chairman of the Supervisors' Airport Committee, was defeated for re-election.

Airport Superintendent Flynn resigned. His assistant, Bartlett Stephens, was named acting Superintendent.

Supervisor E. J. Spaulding was appointed chairman of the Airport Committee when the Board was re-organized for 1930. Other members were Supervisors Jefferson M. Peyser and Carl W. Miles.

On February 1, 1930, the Supervisors appointed Captain Roy N. Francis, pioneer airplane designer and builder, a long-time resident of San Francisco, as Superintendent.

The terminal's new administration and the Citizens' Advisory Committee agreed purchase of the Mills property was the major need of the moment.

They emphasized the leasing arrangement had been undertaken only as a temporary measure and that any improvements would need the solid foundation of permanent municipal tenancy of the property.

Purchase negotiations were begun during February of 1930 and concluded August 30, with payment of \$105,000 as the first installment on a 10-year purchase program covering 1,112 acres.

The city took title to a tenth of the acreage each year, with payments for several years being made directly from tax funds.

The land payments continued to be the greatest portion of the annual airport budget that totaled \$210,000 for the fiscal year of 1930-31.

Supervisors also sought \$4,000,000 during 1930 for improvement of the airport.

Voters rejected the bond issue at a November 3 election by a vote of Yes, 82,267; No, 55,513, refusing the required two-thirds majority.

As a result, the 1930-31 annual report on the city's airport project, made by the Bureau of Engineering, commented:

"Conditions have continued as during previous years with diminution of activity due to the removal of the fleets of the commercial transport lines to privately owned airports on the East side of the Bay."

Already the airport, whose supporting business activity — when such contracts were in effect — was of the luxury variety, was beginning to feel the effects of national economic conditions that developed into the Depression of the Early Thirties.

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But there was one brief surge of activity at the field before the airport reached the lowest point in the history of its operations—to then start forward on an uninterrupted march of progress.

One of the commercial airline operations born of the Lindbergh boom and the rising market was Century Pacific Airlines, Ltd.

During May of 1931, the company announced it would start service on the Pacific Coast with some Bay Region city as its main base of operations.

San Francisco was selected.

Service was inaugurated at Mills Field and between June 3 and September 3 the company carried 10,006 passengers along its route in tri-motored, 10-passenger Stinson airliners.

The operation did not survive the general economic conditions that paralyzed aviation of the era.

During the years of the airport's losing fight for recognition—and business—citizens of San Francisco were making up their minds to change administrators of the utilities. A new charter gave control to a Public Utilities Commission, effective January 8, 1932.

The Supervisors made one final decision. On June 9, 1931, they officially changed the name of the airport from Mills Field to San Francisco Airport.

The men who took over administration and management of

the airport under terms of the Charter of 1932 were to find the right formula for mixing "men, money, and mud" into an adequate airport for San Francisco, the Pacific Coast city Nature favored by placing it 200 miles nearer the markets of the East than any other port city of the Continental United States.

Commission Management

San Francisco's new Public Utilities Commission, accepting responsibility for administration of the citizen-owned utilities on January 8, 1932, momentarily had more important things to do than worry about an airport.

The Municipal Railway needed rehabilitation. The Hetch Hetchy project, which guarantees San Francisco its vital water supply, was nearing physical completion. Loose ends had to be tied together into a neat operational bundle.

Both the railroad and the water system possessed the potential of supplying greater good to a greater number than did the airport—which, actually, was virtually deserted. Therefore, the delay in granting attention to it was justified.

Utility Commissioners chose as their manager a San Francisco engineer and contractor, Edward G. Cahill.

He was a man of many talents—and several individual characteristics.

He was a man of exceptional integrity, administrative skill, seemingly endless energy. He had an ability rare among public officials—he could make public business as efficient as private business. He possessed a caustic tongue, a sardonic sense of humor, and came to be known as "The Terrible Tempered Mr. Bang" of the City Hall. When he eventually retired, there were those who did not like him. But all respected him.

Cahill possessed several administrative abilities. Not the least was the willingness to delegate executive responsibility. All he asked was the freedom to select the executives whom he would trust.

His request of his Commissioners was not without merit.

After all, he fundamentally was responsible, as Manager of Utilities, for the operation.

Cahill turned his attention to San Francisco Airport several months after he became the utilities manager. His investigation provoked a comment that might be classed as a masterpiece of understatement:

"We need business."

His observation was inspired by the balance sheet of the problem child utility.

After almost five years of operation, the airport had a book value of \$670,420.19.

The accumulated deficit totaled \$223,705.64.

No provision had been made for depreciation of the physical properties.

The monthly municipal payroll, compensation for 17 workers, totaled \$3,057.32, more than the utility's income. All in all, it was a balance sheet to make a business man sick at heart. And Cahill was a business man who did not intend to remain sick at heart longer than necessary.

Cahill's first official action of airport administration was to terminate the employment of Superintendent Francis and announce the appointment of Bernard M. Doolin as his successor, effective June 1, 1932.

Doolin was the young man from Berkeley who had flown from the Marina after serving over France during World War I as a fighter pilot attached to the Twenty-Second Fighter Squadron.

The son of Mr. and Mrs. M. J. Doolin of Berkeley, he trained for his Army career at the Berkeley Ground School and Rockwell Field, San Diego.

His classmates included Frank Luke, the "balloon buster" and Medal of Honor winner; and Jimmy Doolittle, raider of Tokyo in World War II, famed combat commander in Europe during World War II.

After the end of World War I, Doolin was placed on inactive duty with the rank of captain and returned to San Francisco.

As a civilian, he continued his flying as a hobby, operating a plane from the Old Marina Airport, while engaging in his pro-

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fession of engineering. He joined the Aviation Division of Standard Oil of California in 1926.

Doolin possessed two qualifications for the position of airport superintendent that probably neither he nor Cahill nor any of the individuals who recommended him for the job realized at the time.

One was his war-tempered acquaintance and friendship with men who were to make United States commercial and military aviation the potent force it was to become.

The other was his training and background and experience as a professional engineer.

The friendship served one fundamental purpose. It was to open the doors of the men in authority and give Doolin the opportunity to sell his product—San Francisco Airport.

His professional skill enabled him to design his product in a manner that would encourage the customers to buy.

He was to become the man who mixed the money and mud that built San Francisco Airport.

Just before Doolin took over as airport superintendent, the utility lost its only major cash customer, Century Pacific Airlines, Ltd., which terminated operations on May 5, 1932.

Seven commercial operators, retailing flight instruction, renting planes, and flying "sight seeing" hops, were the field's only tenants. Cahill reduced the number of municipal employees

from 17 to eight. Their cost to the taxpayers was \$1,375 a month.

The official municipal report on airport operations for 1931-32, covering six months' administration by the Board of Supervisors and six months by the Utilities Commission, indirectly told Doolin what his job was in certain terms.

The report said:

"The only question in mind was how could the natural advantages of the airport and its location be best brought to the attention of the flying public."

In the manner of the competent executive, Cahill turned the problem over to Doolin.

Something of an executive himself, Doolin appointed Arthur (Pop) Wilde, veteran of aviation, as his assistant and told him to handle the routine work of administration.

He then set out for the answer to the question of "how could the natural advantages of the airport be best brought to the attention of the flying public?"

Doolin realized the potential, ideal customer was a split personality.

There was the public—the citizen owners of the Airport—who had to be convinced of its worth so they would invest more money in it.

Then, there were the commercial air transport operators who must be convinced of its worth to the degree they would pay money as rent for the use of its facilities.

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These were the strategic objectives of Doolin's campaign. His first objective was the airlines, then all operating from East Bay terminals.

His first tactical undertaking was to determine the geographical origin of their cash customers and cargo.

He played the role of a human IBM machine. He learned that 70 per cent of airline traffic in the Bay Region originated in San Francisco and the communities of the San Francisco Peninsula.

He told airline executives:

"You're getting all your business from us. Give us some."

The airline executives were willing to listen to reason.

They also had heard complaints from their customers concerning time wasted in trekking back and forth across the Bay, jaunts that required more time than was consumed in flying from San Francisco to Reno or Los Angeles.

The first success of Doolin's sales campaign was the signing of the Valley Air Lines, operating from an East Bay terminal. The line operated between San Francisco, Stockton and Sacramento, carrying newspapers and passengers.

Doolin commented:

"This organization could hardly be called a major airline. It was, however, our first step toward recognition by the operators of the fact that San Francisco Airport provided a more accessible port to operate from,

particularly for short range flights such as these in the East Bay fields."



The second tenant Doolin signed was the Cardiff and Peacock Airlines, flying from San Francisco through the San Joaquin Valley, to Modesto, Fresno, Bakersfield, to Los Angeles.

Then, on December 27, 1932, less than six months after the new superintendent had taken over, a fundamental contract was signed.

The Pacific Air Transport Division of United Air Lines moved to San Francisco Airport for commercial operation.

Business brought more business.

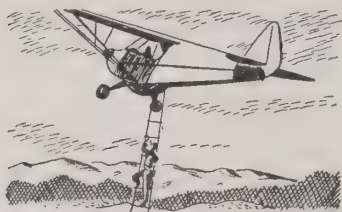
Transcontinental & Western Air, Inc., "The Lindbergh Line," moved into the revenue producing stop on February 1, 1933, extending its route northward from Los Angeles.

To provide swift transportation to and from the airport to downtown San Francisco for airline passengers, whose number totaled 11,735 during the period from December 1, 1932, to July 1, 1933, limousine service was provided by the Airdrome Transportation Company, operating under airport supervision.

The Varney Speed Lines, flying between San Francisco, Sac-

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ramento, Los Angeles, and San Diego, also established its base at San Francisco during the first year of Doolin's administration.



While Doolin was signing up tenants for the airport, he also was selling the utility to citizens of San Francisco. He used many devices.

On November 20, 1932, he arranged a hangar dance to raise funds to finance an air show the next day.

Twenty thousand attended the show.

Naval Reserve planes and pilots participated, as did seven Army pursuit planes, routed through San Francisco on a cross-country training flight from March Field in Southern California by Lieutenant Colonel Henry H. Arnold.

It seemed Doolin had known Colonel Arnold, later General H. H. "Hap" Arnold, commanding general of the United States Air Forces, when both were lieutenants in France.

When Doolin returned from the wars, Colonel Arnold was air officer of the Ninth Corps Area, with headquarters at Crissy Field, at the Presidio of San Francisco.

The Colonel was a good friend of all the pilots—Army Reserve,

commercial, and sportsmen—who resumed their flying at the Marina Airport.

He continually encouraged the advancement of civil aviation and sensed the need of building a reserve of experienced pilots who could answer a call for military duty—if the need arose.

Consequently, his "routing" of the pursuit ship training flight "through" San Francisco the day of the air show was something more than a coincidence.

Doolin was one of the stars of his own show.

He flew an Army fighter to give a demonstration of "dog fighting" against Don Templeman.

But all his work included more than selling leases and staging air shows.

The San Francisco Chronicle, on November 14, 1932, called him "Twelve Hat Doolin" and reported:

"In front of his name he is entitled to write 'Superintendent.' Doolin doubles in brass.

"He is a grease monkey, head janitor, peanut butcher, phone operator, dispatcher, chauffeur, log keeper, gardener, ditch digger, pilot inspector as well as Superintendent.

"He has a different hat for every job and he is 'not official' until he gets on the right hat."

The Chronicle reporter so writing was indulging in a bit of journalistic license but there

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was a grain of truth in his report.

Doolin held down a number of jobs.

While laying out plans for expansion of the Airport, which included preparation of engineering studies, he also was training a staff.

The men he chose included Eugene Sullivan, and Harold Messersmith, former federal weather bureau workers. They were to assume major executive responsibilities as San Francisco International Airport came of age.

Scarcely had the efforts of Doolin and the Public Utilities Commission produced results than the gains were wiped out—temporarily.

The Federal Government cancelled all commercial airmail contracts in 1934. That eliminated all the airmail carriers with the exception of United Air Lines.

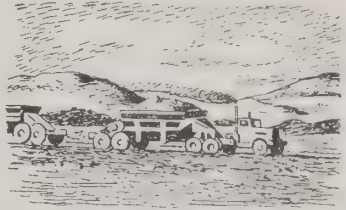
Revenues at the airport were reduced. To meet the emergency, the staff of 16 persons was reduced. Five of the employees were furloughed from March 15 to end of the fiscal year, June 30. The remaining eleven worked three and one-half months without a day off.

Despite the reduction in personnel, all concerned with administration and servicing of traffic, work continued to improve the physical facilities of the utility.

The Administration Building, constructed in 1927 as a "tem-

porary structure," was rehabilitated.

A machine shop, with a floor area of 14,500 square feet, was constructed. Thirty-eight acres of tidelands were reclaimed.



All the work was financed with tax funds. The subsidy was not sufficient to make a great deal of difference in the quality of the airport.

Money in larger sums was needed.

Consequently, the Public Utilities Commission recommended, and the Board of Supervisors approved, presentation of a \$260,000 bond issue to voters.

The election was held November 17, 1933.

Results proved that Doolin had done a good job of selling the airport to its citizen owners.

The vote was:

Yes, 106,339; No, 40,277. The margin was more than the required two-thirds.

Actually, the money brought more than the total of the bond issue could provide under normal circumstances.

By the time the bond funds were available, the federal and state governments had organized their work relief programs as weapons to combat the "depression."

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The city could obtain the subventions — and jobs for its citizens who were out of work through no fault of their own but victims of the nation's economic ills—if it could contribute the average 30 per cent of the total cost of the projects.

The bond money was used largely for that purpose.

Doolin played more than one role in obtaining the federal appropriations for the lasting benefit of San Francisco.

He had been appointed Airport Supervisor for California by the Civil Works Administration.

With the federal and state funds, he supervised the improvement of 32 airports in the State. San Francisco was one of the communities that benefited.

There was some criticism of his dual activities.

Utilities Manager Cahill, never one to avoid a chance to make a few pointed remarks, replied:

"In his capacity he was able to initiate and maintain works projects on San Francisco Airport totaling an expenditure of nearly \$80,000 for labor and materials and at no direct cost to San Francisco."

The critics fell silent.

Doolin was working on still another project. There was talk

of reclaiming the Goat Island shoals in the middle of the bay.

What later was to be known as Treasure Island was begun. Its area was estimated at 720 acres. Doolin said such an area would provide a 3,800 foot runway for land planes, operating from San Francisco's doorstep.

The Airport Superintendent was particularly interested.

Pan American World Airways already was flying the Pacific, basing its operations at Alameda, on the east side of the bay.

Doolin contended the international carrier should operate from San Francisco.

But San Francisco could provide no seaplane base. A suggestion that the city construct one at the cost of \$6,000,000 had been rejected.

Doolin was willing to settle for Treasure Island in the role of an airport.

The airport superintendent ended his first year of administration with a field that included the original area, 14 buildings, including four hangars, and a bond issue.

From the physical standpoint, the airport was obsolete. The runways were only 1,700 and 1,900 feet long.

But income during the year had practically doubled, increasing from \$12,796.64 during 1933 to \$24,267.70 during 1934.

Expenses increased from \$46,423.30 to \$56,604.27. The deficit was \$32,436.51 for 1934 as compared with \$33,636.66 for the preceding year.



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During the twelve months of the 1934-35 fiscal year, an army of workmen, sometimes as many as 2,000 a day, labored at the task of improving the physical facilities of the airport.

The work was financed with municipal, state and federal funds.

At the end of the year the utility was valued at \$1,822,037.40. The sum included a depreciation reserve of \$38,400, the first established in the history of the airport's fiscal affairs.

When the Public Utilities Commission reviewed operations for the 1935-36 fiscal year, members were able to report:

"The status of San Francisco Airport is passing from that of national to international renown."

The task of reclaiming the 38 acres of tidelands necessary for extension of the west-northwest runway to 3,000 feet was completed on November 25. Its width was extended to 150 feet.

Construction of a new administration building, two stories high and 90 feet by 225 feet, was started. Cost was estimated at \$141,000.

Other major improvements undertaken during the year included paving, installation of a sewage system, and completion of water main installations.

With the year's construction work valued at \$1,844,982, the Public Utilities Commission observed:

"The largest portion of the work was financed from federal

funds with comparatively little direct cost to the city."

Specifically, the federal government spent \$1,675,982 on the airport, while the city's share was \$169,000.

The municipal contribution included the \$105,000 annual installment on the land purchase program; and \$22,000 contributed by the San Francisco Chamber of Commerce for purchase of 160 acres of tidelands that might be developed into a sea-plane harbor.

And it was during this year that San Francisco Airport won its first industrial tenant.

The industrial plant was the Stearman - Hammond Aircraft Company, builder of a two-place "fivver" plane that was a decade and one war ahead of its time.

The factory eventually closed. There was not a sufficient market for the product.

United Air Lines remained the only commercial air transport company operating from San Francisco Airport but the record of its activities was impressive and prophetic of things to come.

The company logged 14,600 arrivals and departures during 12 months. Mail dispatched during the year totaled 348,246 pounds, while the express consignments originating in San Francisco weighed 247,508 pounds.

Non-scheduled civilian flying also increased. Forty-one privately owned aircraft were based

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on the field. Seven airplane sales agencies maintained offices at the terminal. One flying club had its headquarters there.

Revenue for the 12 months totaled \$31,317.95. The operating expense was \$67,115.05, resulting in an operational deficit of \$35,797.10. The expense items included \$1,040 for bond interest and redemption.

Figures on the balance sheet indicated that San Francisco had at last found the right combination of men, money and mud necessary for development of an adequate airport.

The fiscal year of 1936-1937 was one of unspectacular but effective work. The Public Utilities Commission reported:

"The past twelve months has been marked by steady progress."

The progress included reclamation of land for the runway pattern, the shaping of a seaplane harbor and construction of the administration building.

Strides also were made toward completion of the Treasure Island project.

There a \$750,000 administration building and two hangars, 225 feet by 335 feet and costing \$400,000 each, were planned.

Construction at San Francisco Airport proper totaled \$1,253,647.80 during the year. The individual projects included completion of the Administration Building at a final cost of \$153,000; paving of 790,000 square feet of runways and taxi strips;

installation of boundary and runway lights, and installation of 45,700 feet of underground power lines.

Operational revenues for the year totaled \$33,679.81, and increase of \$2,361.86 over the preceding year.

The deficit, however, increased by a substantial margin, to \$45,663.04. The expense total of \$79,342.85 included bond interest and redemption charges, again something new in the history of airport fiscal affairs. The number of employees on the city payroll had increased to 21.

While San Francisco had taken full advantage of the financial aid offered by the state and federal government work relief programs, more direct financial contribution by the citizens was suggested.

The annual airport review called attention to changes in federal regulations that delayed work, principally on the seaplane harbor and channel, and commented:

"It is now apparent that other means of financing must be found for the 2,500,000 yards of dredging for the harbor channel, for the remaining earth and rock fill for the seaplane port land areas, seawalls and breakwaters, and for the seaplane port ramps, buildings, structures, roads, walks, utilities, fences and landscaping.

"Substantial improvements to the landplane landing field must be made in the near future in

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order to continue to attract the principal airlines."

One of the land improvements needed was increasing the runway lengths from 3,000 feet to 5,000 and 6,000 feet to accommodate the Douglas DC-3, a twenty-one passenger transport plane that had become standard equipment for the commercial airlines—and the larger four-engine planes in the making.

A \$2,850,000 bond issue was proposed. Voters considered it on November 2, 1937.

But before that date, on September 5, 1937, San Francisco Airport became of age.

Then Trans-Continental and Western Air, Inc., later to be called Trans World Airlines (TWA) as its routes virtually spanned the globe, re-established service to San Francisco, giving the city its second major, continent-spanning airline.

And Pan American World Airways was preparing to transfer its operations from Alameda to Treasure Island to add a third name to the roster of four star tenants.

The proposed bond issue received numerous endorsements but one was particularly significant.

It was granted by the San Francisco Bureau of Governmental Research, representative of the city's "down-town" property owners who keep a sharp and critical eye on how their tax dollars are invested and spent. Their interest is understandable.

They are the largest individual taxpayers.

The Bureau commented:

"San Francisco Airport is well managed and has made good progress in recent years."

The statement also called attention to the fact that the utility's revenue had more than doubled during the year, something large taxpayers could understand—and appreciate.

Voters approved the proffered bond issue. The vote was:

Yes, 108,573; No, 46,683.

Pan American World Airways signed the Treasure Island base lease.

The schedule of rents was prophetic of the charges that would be made in the future, placing the weakling utility in a firmer financial position and giving it some of the characteristics of a "big business" operation. Pan American would pay:

\$1,000 a year for the first five years.

\$5,000 a year for the second five years.

\$10,000 a year for ten years.

The city's total income thus was fixed at \$130,000. In addition the company agreed to spend a half million dollars of its own money at the base, actually giving San Francisco another industry.

Construction work in progress during the 1937-1938 fiscal year was valued at \$451,972.11. This sum included contributions from the federal government.

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Work of reclaiming 315.6 acres of tidelands was started. Airway traffic had been placed under control by radio. A control tower, manned by qualified operators, was established in the Administration Building.

Revenue for the twelve months totaled \$64,637.54, with expenses amounting to \$102,995.96. The deficit was \$38,358.42. Total assets of the airport were now \$3,070,862.57. Commenting on a surplus of \$1,565,746.84, auditors said:

"This is the equity of the people of San Francisco in San Francisco Airport. It represents the amount that the present value of the properties exceeds the outstanding obligations."

Months of the 1938-39 fiscal year were months of work.

For 56 days the terminal was closed to air transport traffic because of the activity on the ground. The construction items included a 9,000-foot seawall and the filling of 300 acres of tidelands. The runway pattern was established as follows:

Northnorthwest by South-southwest, 4,650 feet by 200 feet.

Westnorthwest by Eastsouth-east, 3,000 feet by 200 feet.

Northnortheast by Southsouth-east, 3,000 feet by 150 feet.

Forty acres were purchased several miles south on the Peninsula to permit establishment of a radio range station to facilitate the approach and landing, and takeoff and departure of planes under conditions of minimum ceiling and visibility.

The Wunderlich Radio Company, specializing in manufacture of shortwave equipment, opened a factory at the Airport.

Final legislation for construction of a Coast Guard Air Station, to cost \$927,000, was approved.

To acquire the Air Station at San Francisco Airport, the city deeded 20.53 acres of land to the federal government.

The federal government agreed to share the cost of dredging the required channel and also agreed to maintain it throughout the years without cost to the city.

That agreement was to save San Francisco \$1,000 a month during the years to come.

Mud dredged from the channel was pumped to the airport boundary to form a sea wall. Behind the barrier was reclaimed tide lands, expanding the operational area.

Construction expenditures for the year totaled \$1,556,745.27. The city contributed \$746,984.24 and the remainder, \$809,761.03, was allocated from Works Progress Administration funds.

Revenue during the year totaled \$51,285.22, while the operational expense was \$152,140.46, which included a \$64,354.30 allowance for depreciation. The year's deficit was \$90,855.24 while the total assets were \$4,853,292.38.

The following year, 1939-40, was another period of achievement.

Officials reported:

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"A series of all-time highs for operations conducted since the airport was inaugurated in 1927."

Activity highlights were:

Passengers: 126,546.

Transport plane operations: 17,797 flights.

Mail: 1,315,311 pounds.

Express dispatched: 178,448 pounds.

Private plane operations: An average of 600 landings and takeoffs a day by 42 aircraft.

The private plane operations mainly concerned activity of the Civilian Pilot Training Program, sponsored by the Federal Government and the San Francisco Junior College as an item of defense preparation.

San Francisco citizens again recognized the worth of their airport.

They granted civil service rights to its personnel. The vote on the required charter amendment, presented at the May 7, 1940, election was:

Yes, 84,000; No, 53,000.

Radio control of all air traffic was enforced during the year.



Each plane was required to carry at least a radio receiver to receive landing and takeoff instructions from the municipally employed tower operators.

Their task was to weave the swiftly moving aircraft in the "traffic pattern" into a steady procession of landing and departing planes, all funnelled into a single runway.

The traffic control work was so efficiently handled that no accidents have occurred through "traffic congestion" at San Francisco International Airport.

From the beginning of enforced traffic control, the system developed until the devices used included the magic of radar.

But the personnel, to be transferred from municipal to federal control in the Civil Aeronautics Administration of the Department of Commerce, continued, their skill keeping pace with the requirements of the new electronic devices given them.

Their chief remained Eugene Sullivan.

The value of the physical plant of the Airport continued to increase. As the nation neared the moment of war on a global basis, the utility was a \$5,586,512.94 asset to the citizens of San Francisco.

Of that sum, \$2,790,285.03 was considered "surplus," or the unencumbered equity of the city.

Revenue increased, totaling \$63,933.42. Expenses, too, increased, to \$140,333.85, for an operating deficit of \$76,400.43.

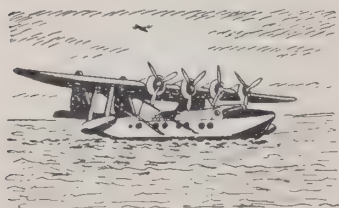
The fiscal year of 1940-41 was another of achievement for the men who were building with money and mud. Highlights of the year's operation were:

"MEN, MONEY, AND MUD"

1. Signing of an industrial contract with United Air Lines that established the air transport company's Western Division operation, maintenance, and overhaul base at San Francisco. The term of the lease was a minimum of 20 years.

2. Establishment and operation of the \$1,000,000 Coast Guard Air Station at the terminal.

The third significant event of the airport's year was seizure of Treasure Island by the Federal Government.



The Navy had plans for using the Island as a major staging base during the war that was to come.

For the moment it appeared the City of San Francisco had suffered great loss.

But eventually San Francisco—and its airport—was to receive more of the things money can buy than ever could have been gained through peacetime operation of an airport at the mid-bay site.

But this victory was to be the fruit of lengthy negotiations. Meanwhile, there were victories in minor tactical skirmishes to meet the increasing public demands for service at the airport.

While hardly important in the

great scheme of things, the lack of food at the airport for waiting passengers was one of the greatest complaints.

Several restaurant operators had attempted to fill the need. They failed.

Then came along a young man who solved the problem—profitably for all concerned.

His name was David Rasmussen. He arrived literally equipped with a bucket of "spuds," a paring knife, a pound of hamburger, a pound of coffee, a set of dishes, and one match to light the stove.

"If the match had gone out," he was to recall years later, "I would have been out of business. I didn't have enough to buy another."

Through the genius by which some men succeed where others have failed, Rasmussen developed a fine restaurant at the airport, sometimes financing required expansions with his own credit to give the Administration Building additional, needed service space.

As his gross increased, the Public Utilities Commission took more interest in the rent producing potential of the cafe.

A lease was prepared, signed.

San Francisco was guaranteed \$200 a month rental with the option of taking five per cent of the gross food sales and seven and one-half per cent of the gross bar receipts.

By 1944, the city's income from this single airport concession was \$10,373.98, almost equal



**PAYROLLS
AND
ROYALTY**



PROGRAM: DEDICATION SAN FRANCISCO INTERNATIONAL AIRPORT

Times of military flight demonstrations are dependent on variable air traffic conditions during day. Exact time will be announced over public address system.

August 27

10 a.m.

Official opening Terminal Building
by Mayor Elmer E. Robinson

11:15 a.m.

Coast Guard Helicopter Rescue
Terminal Area

Noon

Precision, Super-Sonic Military Flying

2:30 p.m.

Dedication Ceremonies
Governor Goodwin Knight

4:15 p.m.

Coast Guard Helicopter Rescue
Terminal Area

5 p.m.

Precision, Super-Sonic Military Flying

7:45 p.m.

JATO Take-off Military Aircraft
Entertainment Terminal Area during day

August 28

10 a.m.

Airport Opens

11:15 a.m. — 1:15 p.m. — 5:15 p.m.

Coast Guard Helicopter Rescue
Terminal Area

1:30 p.m. — 4:15 p.m.

Precision, Super-Sonic Military Flying
Continuous Entertainment Terminal Area

7:45 p.m.

JATO Take-off Military Aircraft

August 29

9 a.m.

Private Plane Fly-in

10 a.m.

Airport Opens

11:15 a.m. — 1:15 p.m. — 4:45 p.m.

Coast Guard Helicopter Rescue
Terminal Area

12:45 p.m.

Precision, Super-Sonic Military Flying
Continuous Entertainment Terminal Area

During the day entertainment will be presented by: Coast Guard Drum and Bugle Corps, Army Drill Team and Band, Marine Corps Drill Team and Band, Air Force Drill Team and Band, San Francisco Municipal Band, St. Mary's Chinese Girls Drum Corps, Folk Dance Federation of California, Chambers of Commerce of Millbrae, San Mateo, Burlingame, and Menlo Park. Yugoslavian Dance Team sponsored by Consul General Branko Karadjole. Military precision flying by Air Force Thunderbirds and U. S. Navy Blue Angels. Paul Speegle master of ceremonies. Aviation industrial exhibits in Terminal Building Area and Terminal Building.



**INDUSTRY
AND
GLAMOUR**



to the total airport income when the Public Utilities Commission assumed responsibility for operation of the utility.

Acquisition of the United base was a San Francisco victory over other communities in the Bay Region, all anxious to receive the payroll producing, high purchasing establishment.

The four engine planes the company was preparing to operate on its domestic runs would require an army of skilled technicians to maintain.

San Francisco was the successful bidder. This was made certain because Mayor Angelo Joseph Rossi, his Public Utilities Commissioners and civic leaders interested in the future of the terminal had the vision to prepare plans, all financed with funds voted by the citizens of San Francisco.

The agreement was not one-sided.

According to the terms of the lease signed October 1, 1940, United Air Lines agreed to use certain land and city-constructed buildings for a twenty-year period.

The city spent \$400,000 to provide the land and buildings. The air transport company spent another \$850,000 on the project. And agreed to pay the city a total of \$130,000 in rent over a twenty-year period.

At expiration of the lease, the buildings constructed by United were to revert to the city.

But this was not all the good

the lease brought to San Francisco.

A schedule of landing fees was established. This first schedule was approved June 23, 1941, and provided:

A charge of \$150 a month for the first three schedules, and \$50 a month for additional schedules.

This rate applied to aircraft not exceeding 25,000 pounds gross weight. Additional charges would be made for larger aircraft—and they were coming.

And San Francisco obtained still another benefit from the United contract that produced the first real industry at San Francisco Airport.

This was the million dollars a year that United Air Lines was to spend in the community for materials and supplies, for wages, and other commodities the region had to offer.



During the years to come, this sum was to multiply — with benefits for the entire region, not only San Francisco but the cities and communities of the San Francisco Peninsula.

The Public Utilities Commission commented that the contract and project represented "the greatest single industrial development in the history of

"MEN, MONEY, AND MUD"

San Francisco Airport and it will be an ever-expanding addition to the commercial life of the city and community."

The United States Coast Guard Air Station at the terminal was commissioned on November 15, 1940. There was a special celebration.

This station, originally commanded by Lieutenant George H. Bowerman, USCG, gave San Francisco an additional protective service for its vital shipping industry.

Surveys had established there was a need for a Coast Guard Air Station on the Pacific Coast in the vicinity of San Francisco.

The city tendered the required acreage and the site, an integral part of the airport, was accepted by the federal government.

Before the station was commissioned, President Franklin Delano Roosevelt had proclaimed a limited national emergency, as of September 8, 1939. Personnel of the Air Station were given wartime duties in addition to their peacetime assignments when the station opened.

These duties were only a hint of things to come. It was only a matter of months when the airport would be a war weapon.

The news of the Japanese attack on Pearl Harbor was given to those above San Francisco Airport in an unemotional manner.

The day was warm and clear. Since dawn, privately owned

small planes had been lifting from the runways, their pilots indulging in the pleasure of flight.

Some of them ventured over the ocean, restless and blue beyond the spine of the hills.

None expected the outbreak of war.

Without warning the radio receiving headsets clamped over their ears crackled with the static that precedes a broadcast.



Then a calm, sure voice said: "It may interest you to know that the Japanese have bombed Pearl Harbor."

The speaker, the San Francisco Airport Control Tower operator, clicked his switch, ending that broadcast.

Station KPSF, broadcasting on a frequency of 269 kilocycles, then went silent for the transmission of peacetime messages.

Those who heard the broadcast banked their aircraft toward the airport, tawny and now great below them.

As they swung into the traffic pattern to approach for their final landing, nothing had changed for them — and everything had changed for everyone.

Civilian flight instruction was halted on orders of the Civil Aeronautics Board, as it was at

"MEN, MONEY, AND MUD"

every airport in the nation.

Military authorities took over the field, permitting commercial airlines to continue operations under wartime conditions.

Facilities and installations at San Francisco Airport that shared the burden of war assignments included:

The Civil Aeronautics Authority radio range station.

The Civil Aeronautics Authority trans-Pacific radio station.

The Department of Commerce Weather Bureau.

War did not diminish activity at the airport. Rather, it increased.

During the first seven months of war, until June 30, 1942, the daily average of landings and takeoffs increased. The total for the twelve months of the fiscal year was 112,641.

Many military aircraft operated from the field. Missions included operational training for pilots and crewmen on their way to combat; patrol flights, and contract flying by domestic airlines for the Air Transport Command.

When the year concluded, the Public Utilities Commission reported:

"The San Francisco Airport, owned and developed by the citizens of San Francisco, has proved a good investment and of tremendous value to the war effort and we may well look forward to the post-war era when the facilities are likely to be taxed to capacity by scheduled air carriers."

Revenue during the twelve months totaled \$74,402.86 as compared with an operational expense of \$147,316.02.



Deficit for the year was \$72,913.16 while the field's book value increased to \$6,685,624.84.

The twelve months ending June 30, 1942, were months of wartime activity. Non-scheduled civilian flying was excluded but military and commercial transport operations increased.

The year's construction was valued at \$1,141,955. The city contributed a total of \$466,084; United Air Lines, \$415,871; and the Works Progress Administration, concluding its programs, spent \$210,000. The Civil Aeronautics Administration improved runways at a cost of \$168,000.

Revenue for the year, obtained from 19 individual sources, totaled \$58,569.10 while the operational expenses increased to \$160,757.65, resulting in an operating deficit of \$102,757.65.

The fiscal year of 1942-1943 was more successful financially.

Operating expenses were reduced to \$91,101.74 and operating income increased to \$69,097.48, reducing the financial deficit to \$32,004.26. The bal-

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ance sheet of the utility showed a total investment of \$7,088,793.56 with the surplus or citizen-owned equity totaling \$4,910,556.31.

During the year Transcontinental and Western Air, Inc., on October 1, 1942, signed a twenty-year lease for hangar facilities, firmly anchoring the transport company's Northern California base at San Francisco Airport.

Result of a decade's work and wartime aviation development led the Public Utilities Commission to remark as the fiscal period ended:

"To cope with air traffic activity anticipated in the post-war era, extensive plans are being formulated for the further development of the airport to the extent that San Francisco Airport will be capable of accommodating some 7,500,000 scheduled airline passengers annually."

The fiscal year of 1943-1944 brought culmination of a deal that gave San Francisco the necessary airport land area to serve the planes that could carry 7,500,000 passengers a year.



In closing the deal, the Public Utilities Commission drew one card in a high stake poker game to fill its two pair hand and win

\$10,000,000 with a bet of \$38,000.

Treasure Island, it will be recalled, was intended as a mid-bay airport for the San Francisco Bay Region.

The Navy seized the island in 1941 and developed it to the extent that the Department desired a permanent title to the property.

San Francisco claimed the federal government should pay \$8,085,762.89 for its equity in the island.

Actually, the city had invested but \$38,000 in Treasure Island.

The cost of its reclamation was financed by the Exposition Corporation and the federal government through expenditure of work relief funds.

The city's investment was mainly the cost of formal participation and inspection fees for survey of the completed work.

The federal government did not take seriously San Francisco's demand for \$8,085,762.89—and countered with a few demands of its own.

The major one was institution of condemnation proceedings to seize 118 acres of San Francisco Airport for development of a federally owned project.

About this time Mayor Rossi, Public Utilities Manager Cahill, and members of the Public Utilities Commission decided to draw their one card.

They sent Doolin to Washington. He called on his World War I friends—now wearing the stars of generals. He returned

"MEN, MONEY, AND MUD"

to San Francisco. Both parties to the dispute announced they would compromise.

The Army and Navy Departments agreed to spend \$10,000,000 improving San Francisco Airport, including the reclamation of 93 acres of land, in exchange for a deed to Treasure Island.

San Francisco accepted.

The city even obtained some rental income from the federal government in the deal. A fee of \$1 a year was charged to the Army for exclusive use of the airport during wartime — with the stipulation that all facilities not needed by the military could be rented or used by the city.

None of the commercial airline operations, including the United Air Lines base, was disturbed.

Furthermore, the agreement provided that all improvements made to the property by the military services would revert to the city when the war was concluded and the state of national emergency dissolved.

Commenting on the San Francisco Airport program, Colonel William Westlake, G.S.C., Assistant to Director for Army Air Forces, said:

"This improvement is part of an integrated program in the San Francisco Bay area to provide sufficient facilities for Military and Naval use during the current emergency in a manner which will also provide the greatest permanent benefits for both military and civilian re-

quirements.

"The Army's interest in Mills Field (San Francisco Airport) is in the necessity for providing a suitable airport for trans-Pacific operations as a reserve station if existing Army installations become over-loaded.

"Through this integrated program it is felt that the regular and peak loads of the War Effort can be accommodated."

Artemus L. Gates, the Assistant Secretary of the Navy for Air, explained the reason for the Navy's interest. He said:

"That the Navy Department considers these seaplane facilities to be of great value in the prosecution of the war effort is indicated by the expenditure of over \$3,000,000 in their development."



Pan American World Airways, serving during wartime as a contractor to the Naval Air Transport Service, moved its Pacific-Alaska Division headquarters from Treasure Island to San Francisco Airport during April of 1944.

The company agreed to renew its agreement with San Francisco when the war ended.

As a result, San Francisco had concentrated all its airport operations at a single field.

"MEN, MONEY, AND MUD"

Moreover, the improvements gave the city an airport that would be adequate in land area for any operations that might be conducted during the first decade of peace.

All the improvement and reclamation work — men, money and mud—had given San Francisco an airport with a total area of 2,864.63 acres during a decade.

The use classification of the land of the moment was:

Developed, 675.00 acres.

Undeveloped, 618 acres.

Tidelands, 1393.00 acres.

Highways, 25.00 acres.

Radio Range Station, 40.00 acres.

Coast Guard Station, 20.53 acres.

Pan American (Navy Station), 90.63 acres.

The field's runways totaled 15,925 feet. Their length and number was to increase.

Two other achievements marked the year's administration.

Western Air Lines established service between San Francisco and Los Angeles on May 15, 1944.

Before the end of the year the company was operating a total of six schedules a day, hauling more than 100 passengers every twenty-four hours.

The second achievement was conclusion of an agreement with the State Highway Commission for re-routing the Bayshore Highway, which bisected airport property.

Cost of removal of the highway to the west to be developed into a freeway, was \$1,250,000, with the city underwriting the expense.

The Public Utilities Commission considered the investment would pay dividends by permitting industrial development of the property.

As the seventeenth year of the airport drew to a close, the city needed more money to exploit the improvements that had been financed by the municipality and the federal government to give San Francisco an aerial terminal valued at approximately \$17,000,000.

Actually, San Francisco taxpayers had invested but a quarter of this sum. Records compiled by the late Harold J. Boyd, controller, revealed the city's investment was \$3,939,404.45 on January 1, 1945.

But this investment, and shrewdly won federal funds, had resulted in San Francisco building a solid foundation for development of a modern port for modern transport.

During the years to come, problems would be magnified; personnel of those engaged in the work would change.

Before the year ended there was a replacement in the high command that guided growth of the utility.

Cahill, having compiled a magnificent record of administration, retired as Utilities Manager.

Typical of the man, he already had trained his successor, James H. Turner. He was appointed by members of the Utilities Commission on October 16, 1945.

A more than competent careerist on the staff of the Public Utilities Commission, Turner was a trained engineer, a soft spoken individual who could be firm.

He was to serve under Mayor Lapham for two years. During the next eight years, with the able guidance of Mayor Robinson and his Utility Commissioners, Turner was to direct completion of the modern airport.

Many of the policies he and his staff members developed became standards of airport administration for the nation.

So the years enforced their demands for replacement of personalities.

But the formula remained the same, a combination of men, money, and mud, until the day was to come when tens of thousands were to witness the accomplishment of a great achievement, a truly international airport.

This would be capable of meeting the challenge imposed even by the "jet age" of transportation.

Post War

Peace in the Pacific for the moment was symbolized with the signing of the Japanese surrender document during ceremonies aboard the Battleship

Missouri, a motionless, majestic symbol of the nation's might.



Men thereupon wishfully envisioned an era of tranquility. They failed to realize, however, that the tranquility of peace is only relative.

Even without the explosive incidents of war—the ultimate of man's inhumanity to man—there was conflict. For the problems of assimilating a nation and people geared for war was, after its fashion, conflict.

San Francisco was particularly concerned with one facet of this problem.

There was an established pattern, tested historically, for re-conversion of its natural port facilities. That was not too difficult.

But its Twentieth Century port facility—San Francisco Airport that during the long months of the war had become International—was a problem child.

Military necessity had increased its demands for its services.

Yet the nature of the reason for this demand had restricted if not completely halted expansion of these facilities.

Domestic air carriers, their operations dedicated solely to the prosecution of the war effort,

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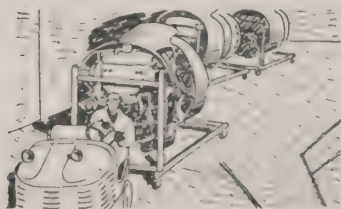
had doubled and redoubled their activity at the terminal.

Military aircraft, from fighters to heavy bombers and cargo carriers, demanded service from the terminal.

Industrial activity increased and multiplied as service and maintenance facilities for tens of hundreds of aircraft was supplied. The items handled ranged from delicate, microscopic bits of complicated flight instruments that gave the answer of life and death to men; to the massive poundage of assembled aircraft engines whose structural strength could curb the fury of hundreds of horsepower of energy.

Illustrative of the gigantic activity that developed at San Francisco International Airport during the war was the record compiled by the men of the Coast Guard Air Station at the terminal.

Aircraft from the station, nestled on the harbor brought about through the vision of San Francisco, conducted air sea rescue operations over a sector of the Pacific that was bounded on the north by Crescent City, in Oregon; on the south by Santa Maria; and the "point of no return," midway between San Francisco and Honolulu.



The Coast Guardsmen saved 103 humans of the 217 involved in 67 ditchings at sea during the war months. Their planes made 4,337 flights, flying 9,339 hours, casting their shadows over 4,727,032 square miles of the restless waters of the Pacific.

In the background of all these achievements—civilian and military — one fact was becoming more sharply etched against the future.

This fact was sketched in words by Dick Pearce, writing from Hickman Field, Hawaii, in *The San Francisco Examiner* of April 16, 1945. He observed:

"Young Americans with air force wings are conquering the Pacific with dizzy swiftness these days, and every new conquest is a warning to San Francisco to start putting large sums into San Francisco Airport right now.

"The alternative may be loss of the present position as the Pacific Coast's premier aerial port to another and more enterprising city."

This was merely saying publicly what city officials had been saying in private.

Mayor Roger Dearborn Lapham, successor to Angelo Joseph Rossi, and his aides had been mulling over plans for months.

They had two ingredients of the needed recipe — men and mud. All they needed was money.

When the estimators had totaled their columns of figures, the sum was an odd figure something less than \$20,000,000.

The total rather amazed some of those involved.

But Mayor Lapham, a shipping executive who was accustomed to dealing with money in million dollar units, was not overpowered by the estimates.

"Give yourself a little cushion," he told his aides. "Make it an even twenty million."

The estimates were changed to balance exactly at the sum suggested which was to be submitted to the voters in the form of a bond issue.

Cahill was blunt in his summation of the need for the money.

He growled:

"We get the money or we go back to the horse and buggy days."

One of the improvements to be financed with funds from the bond issue was extension of the runways, their DC-3 length insufficient for the four engine aircraft that were standard equipment.

The Utilities Manager had learned the necessity of longer runways the hard way.

When the project was proposed, so goes the unconfirmed but undenied story, Cahill reacted in no uncertain terms.

"The runways are long enough," he said.

None denied that Cahill was an excellent administrator and a master of the art of street sweeping, a skill he learned while serving thirty days in a Mexican jail, his payment to society for cheering the bull

rather than the matador.

But the aeronautical experts argued:

"He doesn't know anything about flying."



They talked the unrelenting but unsuspecting Utilities Manager into taking an airplane ride.

The plane commander strapped him in the co-pilot's seat, began his take off, deliberately held the multi-ton aircraft, moving at two miles a minute, on the ground and refused to let it become airborne until the last possible second.

The onrushing boundary fence loomed so closely that Cahill ducked.

The Utilities Manager was silent as the plane circled the field, landed. He did not speak until he was back in a swivel chair. Then he said:

"I don't want any more argument about those runways. Build 'em longer!"

But the proposed \$20,000,000 investment was not only for the benefit of those who chose to fly. It was for the benefit of the entire community.

The expenditure would be an investment in community economic prosperity because it would lay the foundation for

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new payroll producing industries.

The ripples generated by this economic stone in the region's economy would extend beyond imagination.

There was physical evidence of the community activity generated by the airport as vital, expanding industry.

Traffic jammed the Bayshore highway as shifts changed at the Pan American World Airways and United bases.

Helmeted steel workers fabricated gigantic storage tanks for the thousands of gallons of gasoline the planes gulped as their food.

An increasing number of service trucks backed up to the receiving docks of the restaurants, commissaries, that supplied the food demands of the passengers—and workmen.

There was a bursting demand for housing within a reasonable radius of the airport, housing for the increasing hundreds of men and women who manned the machines of the new industrial center that was to service the needs of a million persons a year who began or ended their journeys at San Francisco International Airport.

Mayor Lapham knew the necessity of salesmanship in submitting the \$20,000,000 bond issue to the voters.

He exercised care in his selection of key officials to head the citizens committee that would sponsor the presentation to the voters at the November 6, 1945,

election.

Edward V. Mills, a peppery individual who long had been interested in the development of commercial aviation when his duties as a major fire insurance company executive did not interfere, was named chairman of the committee. His team included Marsden S. Blois, a San Francisco banker, and T. S. Petersen, an oil company executive.

The theme of the sales campaign was:

"Provide more jobs."

The possibility that Los Angeles might steal the growing industry was not overlooked. The Southern California city already had voted \$12,000,000 in bonds for airport improvement.

Mills remarked:

"If San Francisco voters turn down this chance at the November election, it will be their loss. Los Angeles will take over."

Election day the voters did not fail themselves. The morning after the balloting, on November 7, 1945, Political Editor R. W. Jimerson of The Examiner, wrote:

"San Francisco voters gave an overwhelming five to one majority to the \$20,000,000 airport bond issue as the highlight of the city election yesterday, assuring development and enlargement of the municipal facility into the airways hub of the Pacific."

The vote was:

Yes, 147,978; No, 29,309.

Because the bonds—voted for a specific purpose—were a first

mortgage on every San Francisco home and business, a two-thirds majority was required for approval. The winning margin was 29,696 votes.

Some of the voters may have been influenced by the Mayor's efforts to prove that the airplane was here to stay.

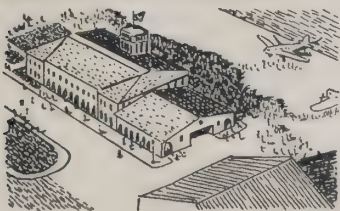
He dared to try to learn to fly in one easy lesson before a hundred thousand people who attended an Air Fair at the terminal the Sunday before election.

Mayor Lapham's craft was a 65-horsepower plane, with simplified controls. With an instructor aboard, the Mayor circled the field, the plane bounced when it touched down—which proved His Honor had the controls. When he returned to the viewing stand, Mayor Lapham remarked, with considerable nonchalance:

"Easy as falling off a log."

Utility Commissioners had no time for such quips the day after election. They began unwinding the red tape to find the \$20,000,000 in cold cash.

They raced an opponent they could not beat—inflation.



Eventually, it became the responsibility of the next Mayor of San Francisco, Elmer E. Robinson, to guide the project to a final conclusion, to convince the

people they should make still another multi-million dollar investment in their airport.

Success of his efforts was to be symbolized in the eventual construction of a modern functional terminal and administration building that was to be the pattern for designers of similar structures for years to come.

Despite inflation, the terminal continued to grow; a bit haphazardly, it is true for there were not sufficient funds for planned expansion. But make-shift means were found.

Expanded restaurant facilities, for example, were needed.

San Francisco did not have the money to construct the required building. Such a structure was low on the priority list.

Rasmussen, the concessionaire, financed the required construction, costing \$125,000. He deeded the property to the city, with-held a portion of his regular rent payments each month for a period and credited it to the city's mortgage.

That was but one of the ingenious methods of financing discovered and used.

The investment paid dividends.

When the record was written for the 1946 fiscal year, the statistics disclosed that the airport was the base for employment of 5,800 persons. Their payroll checks totaled more than \$19,000,000 annually.

Those dollars were a whole blood transfusion for all of Northern California, and the

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rich lush valleys of the Sacramento and San Joaquin. They paid for homes, for clothes, for food, for entertainment.

And they came from Pan American World Airways, Southwest Airways, from TWA, United Air Lines, Western Airlines, and Slick Airways.

Twenty years before, the airport had not a single tenant or payroll producer.

Two of these users of San Francisco International Airport were post-war entries in the highly competitive field of commercial aviation.

Southwest, one of the business enterprises of Leland Hayward, famed Hollywood and Broadway producer, who had a practical side although aviation had its moments of fantasy, was certificated by the federal government as California's "local airline."



It provided scheduled service for smaller communities of the state and translated their distance from any point on the globe in terms of minutes rather than miles.

San Francisco was selected for the headquarters installation of this airline because San Francisco was midway between its terminal points—Medford, Oregon, and the Los Angeles area.

But, so was Oakland's airport, on the eastern shore of San Francisco Bay.

The determining factor in the decision by Southwest executives was the fact that the citizens of San Francisco had backed their promises of a modern airport with money — the \$20,000,000 bond issue.

Other communities in an equally advantageous position could talk. But talk, itself, was cheap. Dollars counted. San Francisco had the dollars.

The second "newcomer" was Slick, an airline devoted exclusively to the hauling of the goods of commerce throughout the nation via the invisible highways of the sky.

This airline was to influence the business practices and mores of the community. Because overnight deliveries of merchandise from coast to coast were made possible for merchants, business changed.

Inventory was "turned" more often. Capital dollars worked harder, more continually. Profit resulted.

This was but one of the factors that increased the actual flight activities at the airport.

When the year ended, scheduled flights, carrying passengers, cargo, mail, and express, were clocked on and off the concrete ribbons of runways at the rate of one every 450 seconds, hour after hour, twenty-four hours a day.

In 1945 the total number of flights was 722,000. A year later

the total was 980,000. The number of passengers totaled 1,025,000 for the 12 month period.

The number of passengers, incidentally, was 8.7 per cent of the airport traffic generated in the entire nation.

As these increases were recorded, the airport administrators made the serious effort to guarantee the citizen owners a steady, stabilized income on their investment, to reduce their continued donation of tax money toward the cost of operations.

Before the effort was successful, years were to pass. But the administrators were vindicated by a federal court decision.

The policy consideration concerned charges to be assessed the airlines for such services as providing runways for landings and takeoffs.

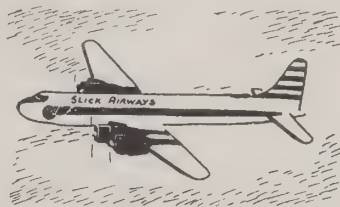
In the beginning there was no precedent for establishment of such rates. There could not be.

Neither the aircraft industry, the air carriers, nor the municipalities and governmental agencies who supplied the required ground facilities knew what to charge.

In fact, the aircarriers did not know what they would fly from one year to the next. And the airport agencies did not know what to give them. The industry, like Topsy, had "just growned."

When construction began of aircraft that were no more than powered gliders, the rule of thumb for considering costs and ground requirements was weight in terms of pounds.

Rates, for landing and take-off charges, naturally followed this custom and were based on the weight of the aircraft.



But this formula did not consider the fact of whether the total weight was the aircraft, its fuel at six pounds per gallon, and its payload—or merely the weight of cargo that produced income.

Then the economists with the slide rules began to make their findings influential in the industry. Economic factors of "payload" became important.

As the aircraft grew larger, the cost of runway construction increased. More cement, more crushed rock, more steel, was needed to sustain the smashing blows delivered by the rubber tired landing gears as the aircraft seemingly touched down with the illusionary lightness of a feather.

Administrators of San Francisco's Airport also had individuals who could figit with digits via the slide rule system.

They evolved a formula of charges that was based not on the total weight of the aircraft but on the "disposable load."

This was defined as the empty weight of the aircraft deducted from the gross weight; i.e., the

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weight that was producing income for the aircraft operators.

The operators were to be charged for only the money earning factors of their flight operations.

This system also solved the problem of what to charge the larger aircraft. No matter how big they grew, up to 100 tons, a just and equitable assessment for the service given them could be determined.

The new rate schedule and increased operations immediately were reflected in the earning report at the end of 1947.

It was during this year that the site of the future modernistic terminal was selected and dedicated by Mills, chairman of the citizens committee which had convinced the voters they should invest more millions to build an "Airport to Match Our Seaport."

Flight operation income almost doubled during the year. The total was \$90,375.37, as compared with but \$48,196.35 during the previous year.

New sources of income were developed. Officials hunted endlessly for them as they blue-printed needed construction, followed the rising graph of inflation that was gnawing away at their \$20,000,000 bank account.

The most dramatic return from a new source of revenue was labelled "communications."

Contracts were negotiated with the communication companies. The city received a percentage of gross revenue—its just return

on an investment that brought about the expenditures.

The first year these contracts were effective the city's share was \$25,575.31.

The airport administration also became a gasoline dealer. It sold to those who needed gasoline to power their aircraft.

The city's commission was seven cents a gallon on casual sales; three cents a gallon on contract sales. The profit was \$74,867.97 during the year.

Despite these and similar increases in earnings, the airport reported a net loss of \$396,129.91 for the fiscal year. Taxpayers made up the loss.

With these difficulties, development continued. During the next year, the main runway was extended to 8900 feet and widened to 200 feet.

This extension was built on land blasted and gouged from the Skyline hills to the west of Millbrae, carried by thundering trucks to the Bay and dumped to reclaim tidelands.

The \$4,000,000 job, contracted by Macco - Morrison Knudsen Construction Company, was the second largest contract let in the history of San Francisco.

Use of the airport continued to increase.

By June of 1948, the daily average of scheduled takeoffs and landings was 202 every 24 hours; the total number of passengers passed the million a year mark.

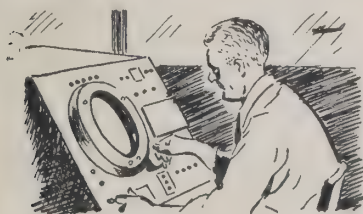
International carriers established bases at San Francisco

Airport, adding "International" to its name.

The foreign flag planes were British Commonwealth Pacific Airlines, later to become Qantas, that linked San Francisco with New Zealand and Australia; and Philippine Airlines which flew the Mid-Pacific route to the new Commonwealth nation.

The federal government recognized the vital value of San Francisco International Airport as North America's major Pacific air traffic headquarters. At the terminal, in cramped, inadequate quarters, were established elaborate flight service facilities.

These included the Overseas Airways Communication station. Skilled technicians, through the magic of radio and human patience, maintained a constant contact with the hundreds of flights that followed the sky highway between San Francisco and Hawaii.



The Department of Commerce established a complete weather service office at the terminal. There was an observation station, a flight advisory service, international and domestic forecasting service, a fire weather reporting service.

San Francisco International Airport began the year of 1948

with increased activity — and spectacularly inadequate facilities. The contrast reflected the need for still more investment of dollars by the citizens of the community.

Inflation had drained the vitality from the \$20,000,000 bond issue. It was obvious that San Francisco would have to pump new money into the enterprise — or leave it half completed with the multi-million dollar investment already made in jeopardy.

The citizens were asked to approve another bond issue, one for \$8,600,000. It was submitted to voters on November 2, 1948 — and defeated, failing to receive the required two-thirds majority.

The vote was: Yes, 172,965; No, 114,006.

The defeat may have been the reflection of the citizens' desire to first finance a \$48,000,000 school improvement program.

But the next year Mayor Robinson asserted his abilities as a leader of municipal government, and won approval of a \$10,000,000 bond issue. Under his direction Mills, Blois and other community leaders presented the airport proposition to the voters in such a manner that it won an overwhelming vote of confidence.

The November 8, 1949, airport vote of "confidence" was: Yes, 179,272; No, 65,848.

With this final \$10,000,000 in the bank, San Francisco proceeded to finish the job; in fact,

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the citizens of mid-century assumed a task that might well have been left to succeeding generations.

Mayor Robinson's administration with George M. Dixon, oil company executive, Navy captain, and one-time All-American basket ball player, who had succeeded Doolin, prepared the airport for the advent of jet transportation.

The major construction project undertaken was a modern, functional, six-story administration building and the adjoining structures necessary to handle multi-millions of passengers, tons of cargo, mail, express.

The design was the creation of William P. Day, soft-spoken San Francisco architect and engineer—and artist with steel and concrete.

Into the building was put the scorched limestone that is concrete; the dull red earth that becomes iron and steel; the magic of chemistry that is plastics; the rich red metal of copper, ripped from the earth of the West; the magic of glass that once was sand; oil sucked from miles below the outer, eroded crust of the earth and processed to be paints and paving.

Hundreds of other bits of material, shaped and fashioned to meet man's demands and will, were gathered, moulded, turned, and formed into the single building.

All the peoples of the nation contributed their skill, their wealth, their energy.

And when the structure was to gleam forth in its pristine majesty as the summer of 1954 waned, the building was a symbol not only of the greatness that is San Francisco at mid-Twentieth century but of the greatness that is the nation and its people.

But before this occurred in permanency on the reclaimed land that rested on the bosom of the Bay, the administrators of San Francisco International Airport developed resources of greater potential dollar value.

Their continual effort was to provide service for the millions who were to patronize the facility—and return a profit in dollars to the citizen owners on the multi-million dollar investment.

The major achievement of 1950 in this respect was the opening of the first formal parking lot.

From the thousands of dollars paid for temporary storage—by the hour or the week—the contract called for payment of 67½ per cent of the gross to the city.

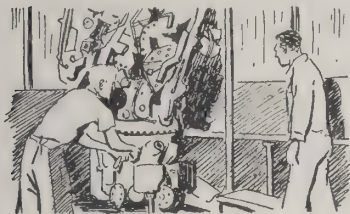
Within months, the income from this source of revenue was more than the airport had collected in twelve months during its first year of operation.

By the end of the year, the terminal had served the demands of more than a million and one-third individuals. Their number was increased to a degree by the establishment of the low fare airline service—an inevitable development of post war competitive commerce.

The industrial potential of the airport was turning into fact.

The payroll was more than \$20,000,000 every twelve months as the total number of workers employed by the airlines and related industries neared the 10,000 mark.

Translated into terms of eco-



nomic factors, this payroll was sufficient to make profitable the operation of 14,525 stores, support 968 school rooms, finance the purchase of 17,292 homes, the services of 1,056 professional men, and pay the purchase price and operating costs of 14,080 automobiles.

The airport payroll did just about this. San Mateo County, whose borders encompassed the sprawling San Francisco utility, was the scene of continual population expansion.

Sub-divisions replaced the open fields which amateur pilots of the immediate pre-World War Two years found so desolate they were the locale for practiced forced landings.

Despite the fact that San Francisco's airport was directly responsible for a major portion of this development of San Mateo County, San Francisco paid for the privilege of maintaining

the terminal in the neighboring county.

San Mateo assessed taxes on the improvements, almost \$100,000 annually, until the right to tax was clarified by court decisions to the benefit of San Francisco. But the Airport continued to finance more work than it received in returns from San Mateo County.

But San Mateo county citizens were not unaware of the effort and contribution San Francisco was making to its prosperity.

As the county faced the necessity of increasing its industry to support its extraordinary growth, Kenneth Brown, secretary of the San Mateo Chamber of Commerce, told business men of the county:

"We will soon have the second largest airport in the country in our backyard.

"Firms located in San Mateo could get \$10,000,000 worth of contracts annually from the airport for service and supply work."

Despite many aggravating administrative problems, swiftly the airport was moulded and shaped toward its mid-century state of perfection.

Then it would be competent to handle not only the traffic of the air age of the moment but the traffic that was to come when super-heated streams of flame scorched air would be the motive power for the aircraft.

Despite the rush and bustle and concentration on the effort to keep ahead of the demands

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for service, the administrators of the airport—the eighty-nine men and women who provide the skill for execution of demands for service—did not become robots motivated by a single idea, iron-bound by rules and regulations.

They could act in a manner in which the humanitarian needs of living beings were placed above the cost as measured in terms of dollars and cents.

Dr. Roy W. Thomas of Redding had occasion to write to the Utility Commissioners:

"I should like to voice my thanks and those of the parents of the sick baby to those of you who were responsible for the saving of a life.

"It is unquestionably due to those special privileges that made it possible to get the patient to a hospital in time."

Behind those undramatic words was a dramatic race with death.

From the north country of fog and redwood trees, there flew swiftly a chartered plane with a child aboard, a child near death, a child that could live only if the resources of San Francisco's rich and varied medical facilities could be reached in time; before the flickering flame of life was snuffed out.

With the unhuman, clipped accent that the magic of radio transmission gives the sound of the human voice, the pilot of the mercy craft told the San Francisco tower operator that death

was flying his wing. He asked assistance in rushing the child to the hospital; he asked that all ground delay be reduced to the minimum.

When he asked permission to land, the full human and mechanical resources of the airport staff had been alerted and had cleared the way for the effort.

The mercy plane swung into the traffic pattern at the busiest hour of the day, at evening when planes from the north and south and east and west were arriving and departing with the hundreds of passengers. The cost of their airborne flight was as high as \$1,000 per hour.

But they were instructed to give way to the mercy plane.

The pilot landed. At almost airborne speed, he taxied to the terminal.

There an ambulance with a qualified crew and a motor cycle escort was waiting.

The plane halted.

Swift, sure and gentle hands of the airport ground crew lifted the child from the plane, placed the stretcher in the ambulance which sped away.

The effort was successful.

The child lived.



The child lived perhaps, because the civil service workers

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extended their effort beyond reasonable demand. Their payment was the knowledge that they "were responsible for the saving of a life."

The year of 1951-52 saw the total number of passengers increase to 2,063,190, and the number of scheduled airline flights pass the old record with the new total of 104,847.

Freight landed and lifted from the runways weighed 26,873,116 pounds. A considerable portion was generated by the logistic demands of the Korean war.

For it was San Francisco International Airport that Pan American World Airways chose to base its planes that carried the tons of vital material across the Pacific to the war zone. Some was unloaded within mortar range of the Communist North Koreans and later the Chinese Communist "volunteers."

The choice was made because San Francisco long before had provided the land for development of adequate maintenance bases.

New airlines established headquarters at the terminal, indicating increasing business generated in the area.

Among them were California Central Airlines and Pacific Southwest Airlines. Both began operations at San Francisco International Airport during 1951. They provided additional service between the metropolitan areas of San Francisco and Los

Angeles and other Southern California cities.

During these years the site of the future terminal and administration building was being reclaimed.

Hundreds of steel piles were smashed to bedrock by blows of towering steam hammers.

Driven home, the steel caissons were filled with concrete.

These were the stilts upon which the building was to stand, a device of engineering that permits relative weak mud to support the hundreds of thousands of tons of weight.

Slowly the structure took shape, the work proceeding seemingly without plans. But each step was taken by deliberate design and there was order amidst the chaos.

When the finished structure rose against the skyline — first the land and then the building — there was a great new landmark at San Francisco International Airport.

The fact that this building was the most modern, considered the most efficient in the nation and perhaps in the world at the moment, was not surprising.

For into the effort went the best that men, who willingly share their secrets of art and science, had been able to devise. And the plan of construction and design was considered a "Criteria for Planning Utilization of Space for Major Air Terminal."

"MEN, MONEY, AND MUD"

Such was the title of Volume 79 of the Proceedings of the American Society of Civil Engineers.

Author was George D. Burr, a civil servant of San Francisco.

Little known outside the circle of his profession, Burr was a member of the staff of the engineering bureau of the Public Utilities Commission when he established the "criteria" for modern air terminals.

The cost of the finished product was \$14,161,000.

The terminal building was constructed under the direction of the Clinton Construction Company which took the contract for \$6,775,000.

The concourses for the loading and unloading of millions of passengers were constructed by the Carl N. Swenson Co., Inc., at a cost of \$1,380,000.

The airmail and cargo building, constructed by Parker, Steffens & Pearce, cost another \$440,000.

The service building and central heating plant was constructed by Morris Daley. The contract was at \$200,000 one.

The acres of aprons, roads, parking areas, and walks, cost \$2,223,000. The contract was carried out by the Lowrie Paving Company.

Utilities, costing \$480,000, were installed by the Central Electric Company and Lowrie.

There is a standby power plant. It cost \$163,000 and was built by Hart & Hyndning, Inc.

The land reclamation for the

terminal site and miscellaneous installations, cost \$2,500,000. The contractors were Morrison Knudsen Company, the Macco Construction Company, and Guy F. Atkinson.

Just what did this investment buy:

The terminal is designed for two-level operation, with out-bound passengers arriving by motor vehicle at the first floor level, one story above the ground, and the in-bound passengers departing from the ground floor level.

The passenger's course of travel from his automobile to the aircraft, and from the aircraft to his automobile, is made as short, as direct, and as nearly in a straight line as possible.

The information and ticket counters are directly in front of him as he enters the building.

After procuring his ticket and parting with his baggage, he enters the corridor leading to the concourses, and thence goes to his airplane.



The waiting room, coffee shop and other passenger accommodations, all overlooking the apron, are along his line of travel, but are so arranged as not to interfere with travel.

The outgoing passengers' bag-

gage is taken at the ticket counter and sent to the ground floor level by automatic lifts and chutes.

After leaving his airplane, the incoming passenger goes to the first floor level of the concourse by a ten per cent grade ramp, travels directly to the Terminal Building and thence down a ten per cent grade ramp to the ground floor, where he reclaims his baggage, and departs to his vehicle at the ground floor level.

The baggage is moved from the baggage handling space on the ground floor of the Terminal Building to the aircraft, and from the aircraft to the Terminal Building, through the ground floor level of the concourses, along paths that do not cross the passengers' lines of travel.

The outgoing passengers move along the upper level of the concourses, and reach the apron level by gently sloped, ten per cent ramps. A small waiting room is provided at the apron level for each gate position along the concourses, so as to keep persons under shelter if departure is subject to short delays.

The Public Health Service, Immigration, Customs and related activities are housed in the outer end of Concourse "D," so that processing of persons and baggage from foreign countries is completed prior to their mingling with others.

Air mail, express and freight activities are housed in the Air Mail and Cargo Building locat-

ed northwesterly from the Terminal Building.

The carts handling this cargo from the building to the aircraft travel along the lower level of the concourses.

Highway vehicles delivering or picking up cargo load along the south side and east end of the building.

The principal restaurant of the Terminal Building is located on the third floor, from which location there is a superlative view of the entire landing field and its operations.

The airport administrative offices are located on the fourth floor.

The United States Civil Aeronautics Administration and Weather Bureau offices are located on the fifth and sixth floors, with some occupancy on the fourth floor.

The heating plant for the Terminal Building and Concourses is located in the Service Building. This building also houses the electric sub-station for the terminal area.

The entire terminal has been designed so that all parts of it may be expanded as demands of increased traffic and patronage may require.

The maximum planned expansion would provide facilities to serve 10,000,000 individuals a year.

So it was that sometimes slowly, when day to day progress was noted; more swiftly when the details of the moment were ignored and only the achievements

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of a period of time were considered, the airport neared completion.

On the eastern shore of the field there rose a \$100,000 structure, exclusively for the use and benefit of those who fly for fun or for business; the sportsmen pilots, the business executives whose time is so valuable their travel must be by air.

Not far away was erected the tower that supports the constantly turning metallic mesh design that is the scanning antenna of the radar.

With this magic box of electronics, the air controllers, the "traffic cops of the air," are able to plot arrivals or departures not only by the sense of hearing but by the sense of sight.

Out in the restless waters of the bay were installed automatic radio facilities, the marker buoys for the airmen seeking their earthly haven when it is hidden from their sight by the darkness of night or rare hours of swirling fog and mist.

The boundary and runway lights were installed, their illumination ranging from mere hints of red to the blazing whiteness of brighter than noon sunlight.

Parallel runways were graded, given foundations of rock, paved. They were needed in twin form to permit simultaneous takeoffs and landings of aircraft, continually increasing in number, each demanding its share of air space.

All this was provided by the

citizens of San Francisco for a new industry.

And the landlord of all this was Brigadier General F. B. Butler, USA, Ret., as the era of basic construction drew to a close. He has succeeded Dixon as airport manager on January 25, 1954 when the oil company executive decided to return to private business.

It fell to the veteran soldier to finish the job that had been started almost twenty years previously. His major responsibility was achieving the greatest benefits possible from operation of the utility.

That responsibility was great.

Only at mid-century was the industry reaching maturity although it had grown within a living human's life span of years to be an accurate barometer of a nation and a world's economic health.

And the mid-century point of its evolution has established San Francisco International Airport as a city of continuous activity of industry.

The City

What is this man-made municipality, this metropolitan concentration of industry, of travel, of service, that is San Francisco International Airport?

Who are its citizens?

What is their work?

What is their contribution to their community?

Imagine you are seated on the flight deck of a modern airliner.

Nothing obstructs your unlim-

ited view as you peer into the void ahead, the horizon shaded by the sharp shadows of the night.

For hours the vista has been one of fantastic cloud formations as the mass of vapor changed; and changed again under the unseen influence of wind and temperatures.

There appeared—and almost instantly disappeared — castles with towering battlements; vast plains on which roamed fanciful animals of another world.

Or, these masses of visible water vapor were sliced by the knife edge of coldness and carved into endless canyons, their vastness illuminated by the silver shafts of light, hurled from a far-away moon.

Suddenly, as you peer into the distance, unconscious of the steady, relaxed yet powerful murmur of the engines that give your craft the speed of flight, there appears a vast expanse of jewel spotted darkness.

To the right is a necklace of amber; to the left a crown of looping gold. Ahead and below there is a sheaf of shimmering platinum, flecked with rubies.

Rationality returns you to the consciousness of the reasonable world of men. Mortals seldom have time for dreaming.

The necklace of amber becomes the lights of the low lying arches of the San Francisco-Oakland Bay Bridge.

The crown of looping gold is the soaring night time span of the Golden Gate Bridge.

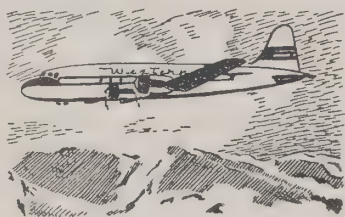
The sheaf of shimmering platinum against the cloth of black velvet is the hundreds of acres of land that has risen from the mud and muck of the Bay to be formed into the firm foundation of your destination, San Francisco International Airport.

The rubies are the runway lights, the flickering signals on the buildings that sprawl over the western edge of the vast expanse of land.

With the magic of a surgeon's fingers, your pilot adjusts his engine and propeller controls, gently moves his flight controls with hand and foot.

He guides your craft swiftly, gently in its return to earth on the ribbon of concrete that is the ruby lined runway.

Then you deplane from the metal cocoon that has enabled you to measure distance in terms of minutes rather than miles and continue your journey in your natural habitat—the earth.



Perhaps you may pause for a moment to check a ticket, an ETA (Estimated Time of Arrival, as the airmen say).

The chic, petite, intelligent woman who helps you may be Patricia League of Western Air Lines. She is typical of the efficiency that has won women their

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rightful place in this new industry.

You will leave this never sleeping city, more than likely to return, one of the millions whose demand for speed have inspired the building of this installation.

But behind the lights, the glamour of the names of far-distant places, the rush, the hustle, is the solid foundation of industry.

There are the great shops and hangars of Pan American World Airways, the World's Most Experienced Airline; of United Air Lines, the major mid-continent carrier whose aircraft link New York and Honolulu in less than seventeen hours of flight time.

It is from the Pan American executive offices that a veteran of aviation, Colonel Clarence Young, directs operations along 30,000 miles of ocean airway.

These airways bind together the continents of the great Pacific Basin, already identified as the arena where will develop the next Era of Man.

From San Francisco the Pan American aircraft fly to Honolulu; the other Islands of the Mid-Pacific, the Central and South Pacific; to the lands of New Zealand, Australia, the Philippines, Hong Kong, Indo-China, Malaya, Thailand, Burma, and India.

To maintain this operation, and service the planes that fly the Alaskan routes of the carriers, Pan American employs 3,680 persons, with an annual

payroll of \$18,000,000 at San Francisco International Airport.

But the airline contributes more than payroll checks to the welfare of the community.

Annually, the Division makes purchases amounting to \$19,000,000. Of this, at least \$12,500,000 is spent in California. A large portion of that sum is sent to vendors in the Bay Region who supply tools, equipment, fuels, lubricants, food, office supplies.

All this is needed to operate the seventeen, four engine, double-decked Boeing Strato Clippers that carry the insignia of Pan American. Each of them is an investment of \$1,500,000.

The job of keeping this fleet in perfect flying shape is a major part of the San Francisco base operations. Nearly a thousand men and women are engaged in direct maintenance work.

Facilities continually are being increased. The latest plant addition is a new engine overhaul shop, costing \$750,000.

An international carrier, Pan American operations are vital to San Francisco's reputation as a city of world trade.

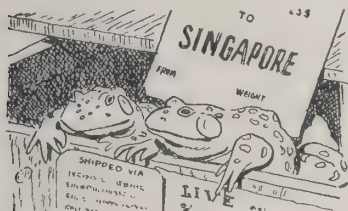
During the most recent complete year, 1953, Pan American flew 2,075,000 pounds of cargo across the Pacific. More than 63 per cent cleared customs at San Francisco.

This cargo brings into focus the diversified ability of air carriers to speed goods to market.

Thousand ton turbines for surface vessels have been "air

freighted” to disabled ships, running up a \$4000 a day loss for their owners.

Medicines are dispatched. Ships documents are forwarded by air.



Inbound cargo from the Orient is exotic. Canaries are flown from Japan and tropical fish from Hong Kong. Monkeys from the Philippines and Singa Pore arrive.

Australia frequently sends prize-winning breeding rams to such distant points as South America and racing greyhounds to dog tracks in the United States.

Manila ships fine embroidery and Tokyo silk and optical goods via Pan America. Thailand sends jewelry.

Another major industrial citizen of San Francisco International Airport is the maintenance and general overhaul base established by United Air Lines, the product of the administrative genius of a one-time Wells Fargo Bank and Union Trust Company clerk — W. A. Patterson.

Periodically, each of the scores of aircraft operated by the continent and ocean-spanning air line is flown to San Francisco.

There it is swallowed by the gigantic doors of the hangar, lifted in the intricate machinery of jigs as easily as a mother cradles her sleeping child.

An army of highly skilled technicians swarm over it.

They inspect minutely each part, each fitting, each instrument; replace worn parts, sometimes substitute a whole new unit for an old one.

They reassemble the craft.

It goes forth to fly again, safely, surely.

The operation of this base by United Airlines illustrates when viewed in retrospect the astonishing growth of civil aviation in the United States during hardly more than a quarter century.

When the only winged creatures who wheeled over the locale of San Francisco International Airport in 1926 were gulls, United Air Lines had but several employees in the Bay Region.

The carrier dispatched but two flights every twenty-four hours.

But now there are more than 4,694 United workers in the Bay Area, the flights number more than half a hundred a day with seats available for passengers totaling almost 3,000. The speed of the aircraft used has increased to six miles a minute.

And United is but one of the airlines serving the nation.

What does the United “family” mean in the way of community prosperity?

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They number almost 15,000 individuals.

They own 3,000 homes with a value of \$38,316,728.

They pay more than half a million dollars a year to cities and counties in the way of property tax.

They contribute another \$150,000 annually to tax treasuries for personal property assessments.

But United and Pan American are not the only tenants of the city that is San Francisco International Airport.

Three carriers fly the flags of foreign nations.

Qantas Empire Airways, successor of British Commonwealth Pacific Airlines, hurtles the seven thousand miles of the Pacific that lie between San Francisco and the friendly, progressive Commonwealths of New Zealand and Australia in a matter of hours.

Japan Air Lines, the symbol of the "New Japan" that arose from the United States occupation of the Island Empire under the administration of pro-consul General Douglas MacArthur, makes its North American home at San Francisco International Airport.

It is worthy of note that General MacArthur made his landfall for his homecoming at San Francisco; and His Royal Highness, Crown Prince Hirohito of Japan also came first to San Francisco when he paid a good will visit to the English speaking world.

It was sometime before the airport recovered from the effect of MacArthur's arrival.

Pan American, which played the role of his ground host, virtually had to rebuild the foundations of its administration buildings after he was greeted by Mayor Robinson.

The concrete had been tunneled to make way for communication cables required by the press of the world to instantaneously report the news of his coming.

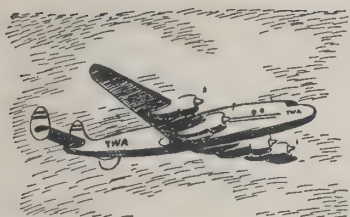
The longest telephone circuit set up by Pacific Telephone for the event was one from the second floor of the Pan American building to 85 Fleet Street, in London, the world headquarters for Reuters. The correspondent using the circuit was Jean Flynn.

Canadian Pacific Air Lines, Ltd., which plans to fly the southwest Pacific trade routes, it the third foreign flag carrier listed among the citizens of the Airport city.

Then there are the versatile domestic carriers.

There is American Airlines, Inc., one of the nation's major carriers. It flies not only passengers, mail, and express to the far corners of the nation but specializes in flying freight which is made more valuable by swift transportation.

Trans World Airlines, whose trade mark is service and speed, whose symbol is the sleek, triple tailed, gracefully curved Constellation. This airline brings the cities of London, Paris,



Rome half way around the world to the fabled Indies within hours of San Francisco.

Western Airlines, resurgent, progressive under the dynamic administration of President Terrell C. Drinkwater, links the cities of the growing, increasingly important West with San Francisco.

Passenger-wise San Francisco is the hub of this operation, with the spokes of the service wheel reaching out to the Pacific Northwest, the Intermountain States, the Twin City area of the Middle West, and the land that is Southern California.

There are the commuter lines that bear their share of the traffic that is increasing continually between San Francisco and the Los Angeles area.

The major carriers—United, TWA, American, Western—participate in providing this service with California Central Airlines, Pacific Southwest Airlines which specialize in flying passengers at "coach fare" costs.

From San Francisco International Airport Southwest Airways operates to the north and south, serving more California cities than any other schedule airlines.

The ports of call for this "local service" are Sacramento, Yuba City and Marysville, Chico, Red Bluff, Redding, Yreka, Crescent City, Eureka-Arcata, Oakland, Santa Clara and San Jose, Santa Cruz and Watsonville, Monterey and Carmel, San Luis Obispo, Santa Maria, Santa Barbara, Oxnard and Ventura, and Los Angeles.

Southwest specializes in little time on the ground.

They tell the story of the time Vice President Ted Mitchell was giving his flight crews a lecture.

"Give the passengers all the time they need to leave and board," he said. "Don't rush them. Take things easy.

"But, don't stay on the ground more than sixty seconds. We haven't got the time to waste and keep our schedules."

Two other residents of the city are The Flying Tiger Line, Inc., and Slick Airways, Inc.

They ignore human freight.

They carry only merchandise, whether it be horses or house dresses.

This specialization in freight haulage has brought about the expansion of a traditional San Francisco industry into the multi-million dollar a year class.

The industry is the cultivation of flowers.

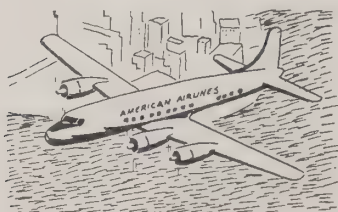
The San Francisco Peninsula long had the climate and the soil and the "green thumbed" men and women to grow wonderful blooms.

But the area of operations and distribution was limited.

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Until the development of the winged freight carrier, transportation available simply was too slow to transport the blooms more than a fixed number of miles before the beauty was destroyed by the passage of time.

But the freight plane, on scheduled operations, extended that distance until the San Francisco growers could serve the world.



Because of air speed, flowers from San Francisco graced the nuptials of Princess Elizabeth, the girl who would be Queen, and the Duke of Edinburgh in London, seven thousand miles away to the east.

Because of the expansion of market by freight planes, the San Francisco flower industry now is bringing more than \$5,000,000 a year in new money to the Bay Area.

And still another airborne operation, for the transit of passengers and mail to the individual communities of the Bay Area, now all without air service, will establish its base at San Francisco International Airport.

Rick Helicopters, Inc., has leased acreage at the terminal. Its flying "egg-beaters" will link the cities of the region.

The city reclaimed the land for this operation. The company will pay \$3,182.78 per year for forty years for its use.

There are twenty-five other corporate and business tenants at San Francisco International Airport. They meet the needs of the millions who pass through the terminal.

One of the most important and outstanding is the restaurants operated by the Interstate Company in the new Terminal Building.

This company started to spend a half million dollars on equipment, decorations, and decor for its restaurants, bars, and cafeteria; ended up by spending almost a million.

The intention and ambition is that the Interstate facility will be outstanding in area that is noted for its fine food, its service, cuisine.

These citizens of the city within a city are representative of a new era in transportation, service.

Their responsibilities are varied.

They provide a meal, a drink, a shoeshine, a facial, books and magazines to read, haircuts, banking credits and debits—all the things that are required to make a modern city function.

These activities—and the flights to all points of the compass that are the basic reasons for their operation—are possible because the men and women of San Francisco have

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been aware that dreams must become reality if the civilization is to progress.

For it was the men and women of San Francisco who provided this earthly haven for the creatures of the air, envisioned by a man of another age, another nation.

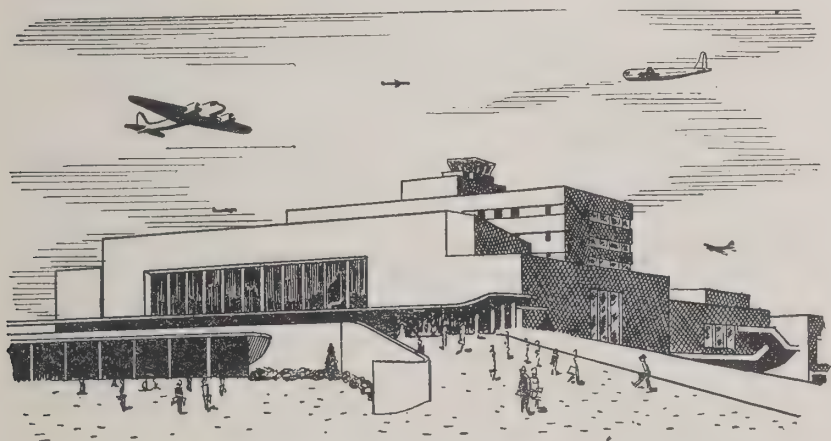
He was Tennyson, and in Locksley Hall he wrote:

"For I dipt into the future, far
as the human eye could see,

"Saw the vision of the world,
and all the wonder that would
be;

"Saw the heavens filled with
commerce, argosies of magic
sails,

"Pilots of the purple twilight,
dropping down with costly
bales."



San Francisco International Airport is a public utility owned and operated by the citizens of San Francisco.

Their elected and appointed representatives directly responsible for the implementation of the peoples' will and the achievement of the International Airport since 1926 have been:

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James Rolph, Jr.
Angelo Joseph Rossi,

Roger Dearborn Lapham,
Elmer Edwin Robinson.

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